Studies in *Schefflera* (Araliaceae), VI. New Species and Subordinate Taxa in the Venezuelan Guayana and Immediately Adjacent Areas

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ABSTRACT. A study of the Venezuelan Guayana species of *Schefflera* (Araliaceae) as part of a family treatment for the forthcoming *Flora of the Venezuelan Guayana* calls for recognition of 30 species not included in the 1984 summary by Maguire, Steyermark & Frodin or a later paper by Steyermark & Holst. Twenty-two species are described here, 12 of them from collections made since 1981, and 8 species are elevated from infraspecific rank. Together with 28 previously recognized species, a total of 58 species are now known from the Venezuelan Guayana and immediately adjacent parts of Brazil and Guyana. Of these, 55 species are endemic or nearly endemic to the region. At the infraspecific level, a new variety is described as *Schefflera chimantensis* subsp. *rugosifolia* var. *iluensis; Didymopanax multiramosus* Steyermark is restored at subspecific rank within *S. chimantensis;* and *S. rugosifolia* Maguire, Steyermark & Frodin is reduced to subspecific rank within the same species. Two previously known species are renamed for nomenclatural reasons. The Venezuelan Guayanan species of *Schefflera* belong to four distinct groups within the genus, for which brief synopses are provided.

Twenty-nine species of *Schefflera* (Araliaceae) were recognized in the Guayana Highland in the most recent revision by Maguire et al. (1984) and a later paper by Steyermark & Holst (1988). Reassessment of the genus for the family treatment of the forthcoming *Flora of the Venezuelan Guayana* has led to the recognition of 30 species not previously accounted for. Twenty-two of these are new to science, and eight were previously described as infraspecific taxa. Two additional undescribed species are known, but their description must await more complete material. One of the 29 previously recognized species, *S. rugosifolia*, is reduced here to a subspecies of *S. chimantensis*, and a new variety is assigned to it. This now results in a total of 58 species of *Schefflera* for the three Venezuelan Guayanan states (Amazonas, Bolívar, Delta Amacuro) and immediately adjacent parts of Guyana and Brazil. Most of the species are extremely localized in their distributions, and all but three are endemic to the region. A complete key to the species will appear soon in the *Flora of the Venezuelan Guayana*, so it will not be repeated here.

The 58 species of *Schefflera* in the Venezuelan Guayana belong to four fairly distinct but informally recognized infrageneric groups, as follows:

1. "Sciadophyllum" group (formerly *Sciadophyllum* P. Browne). Two species of rambling, large shrubs or climbers occur in the Venezuelan Guayana, *S. duidae* and *S. quinquestylorum*, mainly at mid-elevations. They are closely related to other species in the group, which is centered in the northern Andes from Colombia to Peru and has some 50–100 species, depending on how the species are eventually delimited. Additional species occur in western Venezuela, southern Central America, and Jamaica, and the widespread *S. sprucei* (Seemann) Harms extends south to the Brazilian state of Acre.
2. "Didymopanax" group (formerly *Didymopanax* J. Decaisne & Planchon). In the Venezuelan Guayana, this group has six species of small to large trees, occurring mostly below 1,000 m and including *S. morototoni* (Aublet) Maguire, Steyermark & Frodin, which is widely distributed throughout Central and South America. The Guayana is an important center of endemism and specialization in this group, paralleling other nodes such as the central Brazilian highlands and the *mata atlantica* in Rio de Janeiro state. All species are arborescent, some exceeding 30 m tall. *Schefflera decaphylla* (Seemann) Harms was treated in Maguire et al. (1984) but does not occur within the Venezuelan Guayana.
3. "Cheilodromi" group. This is a more characteristically Guayanan group, all members of which are terrestrial and mostly arborescent, but not exceeding 20 m tall. In the Venezuelan Guayana, there are 16 species of shrubs or small to medium trees in this group, mostly at mid-elevations and best represented in central Guayana. They are closely related but show affinities to species in

the *S. attenuata* alliance in the Venezuelan coastal mountains, Central America, and the West Indies (Frodin, 1989). The two alliances appear linked by *Schefflera ayangannensis* Maguire, Steyermark & Frodin, a species that occurs east of the Venezuelan Guayana in the Merume Mountains of Guyana and is isolated from the main centers of diversity in the group.

4. "Crepinella" group (formerly *Crepinella* E. Marchal). This is the most speciose of the four groups in the Venezuelan Guayana, with 34 species that are mostly limited to the region. These are usually trees under 20 m high and occur from the lowlands up to 2,800 m. Upon further study, several more or less distinct series may be recognized in this group. Members are found throughout the Venezuelan Guayana except in Delta Amacuro, but few range beyond this region. Two species occur on Serra Aracá in the Brazilian state of Amazonas (Prance & Johnson, 1992), one on Serra Sincor in central Bahia, two in eastern Colombian Guayana (*Schefflera japurensis* and *S. spruceana*), and two in Peru (*S. harmsii*, *S. spruceana*). *Schefflera spruceana* also occurs south of the Amazon River at scattered localities as far distant as Mato Grosso.

The large increase in species now being recognized in the Venezuelan Guayana compared to the last treatment in 1984 is due largely to recent collections from mountains and other areas that were previously poorly sampled or else not collected at all. Twelve of the 23 taxa described in this paper are based on collections made in the last decade. The large Maigualida–Uasadi mountain complex, for example, was not shown by Maguire (1979) in his geographical subdivision of the Guayana Highland and was first visited by botanists in 1988. Even the Sierra de la Neblina, which was the object of expeditions organized by Bassett Maguire in the 1950s and 1960s and by Venezuelans in 1983 to 1987 (Brewer-Carías, 1988), will probably still yield further novelties with greater fieldwork (cf. Huber & Frame, 1989). The summit of Roraima-tepui, which has been explored since the late 19th century, has yielded a novelty in *Schefflera dissidens*. Uplands including the talus slopes, which were singled out by Huber & Frame (1989) and by Steyermark (1979) as particularly worthy of attention, have yielded *S. yutajensis* (Steyermark & Holst, 1988) and some of the new taxa described here, including *S. disparifolia* from eastern Bolívar state. Still, many species remain known from only one or two collections, and care must be taken to extrapolate patterns from an excessively small or nonrandom sample (e.g., Nelson et al, 1990).

Another reason for the increase in species recognized is the reevaluation of material that was previously available for the *Schefflera* treatment of Maguire et al. (1984). This includes elevating to species rank seven subspecies and recognizing nine other novelties among previously examined specimens. In this paper, I have made greater use of leaf and inflorescence characters than before, which has allowed the recognition of additional species. Geographical and ecological differences have also been used to support species distinctions, and some prior misidentifications have been corrected. The distinctions upon which some of the proposed species are based are admittedly small, but no less so than for species pairs such as *Schefflera yutajensis* and *S. quinquecarinata* (Steyermark & Holst, 1988) or, in Africa, *S. lukwangulensis* and *S. umbellifera*. I strongly believe that distinctions of interest should be put on record, especially with changing ideas about the units of biodiversity and their increasing ontological significance.

The several infraspecific epithets transferred here to specific rank are retained as far as possible following Recommendation 61A.4 of the *Code* (Greuter et al., 1988).

New Species and Combinations

Schefflera acaropunctata Frodin, nom. et stat. nov. Basionym: *Schefflera umbellata* subsp. *duidana* Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 74. 1984. TYPE: Venezuela. Amazonas: Cerro Duida, summit, slopes of Ridge 25, 5,500–6,000 ft., 16 Dec. 1928, *Tate 431* (holotype, NY).

Shrub or treelet 1.5–3.5 m tall, sometimes of bushy habit; twig segments glabrous, generally short, to 9 cm long, usually forking at each iteration. Leaves closely spaced, digitately compound, 3–5-foliolate; petioles 4.5–10 cm long, the basal sheath when dry pulling away from the twig but without a distinct stipular ligule; petiolules 0.7–2 cm long. Blades in a single plane, usually elliptic to oblong-elliptic, 5–10.5 cm long, 2–5 cm wide, coriaceous; surfaces contrasting, glabrous and shining above, dull and finely sericeous to whitish pubescent below with a prominent, strongly raised, in cross section somewhat squared-off midrib and often with minute domatia in the axils of the primary veins; apex rounded, the tip usually very slightly emarginate, base ± obtuse and usually slightly decurrent, and margin curved downwards; lateral veins numerous,

very fine, spreading, the secondary veins about as well developed as the primary ones. Inflorescence morphogenetically terminal but quickly surrounded by the (usually 2) actively leafing successor twigs, compound-umbellate; primary rays 2–4, ± ascending, each ray 7–24 cm long, generally very dark or even blackish when dry and usually with 1 ± prominent node in their lower part; secondary rays 6–16 or more, golden-brown pubescent, all terminal and ± ascending, 2–5 cm long, each usually with 2 or 3 minute bracts at a naked node about midway up. Flowers terminal, usually simply umbellulate or sometimes with once-reiterating outer units with peduncles to 1.8–1.9 cm long; pedicels coppery-sericeous, 4–9 mm long, each with a minute rounded bracteole at the base; calyx rim 1 mm across, with 5 minute teeth; petals 5, opening from the apex and spreading before falling; stamens 5; ovary obconic, to 2 mm long; disk ± flat, rising into a stylar column up to 1 mm long or so. Fruit usually 4- or 5-locular, remaining wholly inferior, globose toward maturity, up to 5 mm long; calyx rim to 2 mm across; stylar column to 2 mm long, only slightly dividing at top into 4 or 5 free, laterally spreading ends.

Schefflera acaropunctata is apparently a sister species to *S. huachamacarii* Maguire, Steyermark & Frodin, but differs from it in possessing 4- or 5-locular ovaries (3-locular in *S. huachamacarii*), 2–4 primary rays in the inflorescences (vs. 1 in *S. huachamacarii*), and usually 5 instead of 3 leaflets. The two species belong to the same complex of tepuis, but Cerro Huachamacari is separated and somewhat lower than Cerro Duida and Cerro Marahuaca.

Gleason (1931) referred the first collections of this species to *S. umbellata* (N. E. Brown) Viguier, based on superficial resemblances in the leaflets. However, the leaflet bases in *S. umbellata* are narrower, and the lateral venation is somewhat more coarse. In addition, the ovary is (2-)3–5-locular and the inflorescence is more robust. These differences initially suggested to me that a new species was involved, but Maguire et al. (1984: 74) retained the connection with *S. umbellata*, at least for Tate's material. The newer collections, all from Cerro Marahuaca, were previously misassigned to *S. coriacea* subsp. *neblinae* Maguire, Steyermark & Frodin. That taxon has otherwise been recorded only on one of the outliers of Cerro de la Neblina (with another record, here described as *S. varisiana*, in the Sierra Parima). However, the Marahuaca plants lack the subsidiary whorl of secondary inflorescence rays seen in the type of that taxon; and the leaflets are shorter for their width, the inflorescence is smaller, and the ovary is usually 4- or 5-locular instead of 3-locular. For these reasons, they are best placed under *S. acaropunctata*.

Similar foliar units and relatively small inflorescences may also be seen in *S. montana* (Gleason) Maguire, Steyermark & Frodin. However, the leaves of this taxon are simple, the ovary is 2-locular, and it is generally found at lower elevations.

On Cerro Marahuaca, *Schefflera acaropunctata* inhabits shrub islands in open, often rocky places or grows in woods on slopes or along creeks. Along with the very different *S. tremuloidea* Maguire, Steyermark & Frodin, it is the best represented of *Schefflera* species there. The specific epithet relates to the frequent presence of minute domatia in the axils of the veins on the undersurface of the leaflets.

Additional specimens examined. VENEZUELA. **Amazonas:** Cerro Duida, summit, Desfiladero, 6,100 ft., Aug. 1928–Apr. 1929, *Tate 695* (NY). Cerro Marahuaca: summit, SE quarter, on tributary of headwaters of Río Iguapo, 2,555 m, 25 Feb. 1981, *Liesner 17961A* (MO, NY); summit on SE corner, 2,700 m, 12 Oct. 1988, *Liesner 24683* (MO); summit, SW side of center, 2,660 m, 22 Oct. 1988, *Liesner 25194* (MO); cumbre, sección SE, vecinidades del zanjón, 2,685 m, 15 Jan. 1981, *Maguire et al. 65596* (MO, NY, VEN not seen); cumbre, sección noroccidental, 2,500 m, 16 Feb. 1981, *Steyermark et al. 124387* (MO, NY, VEN not seen); cumbre, sección noroccidental, 2,500 m, 16 Feb. 1981, *Steyermark et al. 124452* (MO, VEN not seen); Huha, cumbre, altiplanicie no arbolada, 2,580 m, 31 Jan. 1982, *Steyermark et al. 125961* (NY, VEN not seen); Fhuif, cumbre, zona boscosa en la falda E del riachuelo, 2,480–2,500 m, 1–2 Feb. 1982, *Steyermark et al. 125986* (NY, VEN not seen); cumbre, extr. NE, 2,580–2,600 m, 30 Mar.–1 Apr. 1983, *Steyermark & Delascio 129242* (MO, NY, VEN not seen); cumbre, parte central de la montaña SE, 2,560 m, 10–12 Oct. 1983, *Steyermark et al. 129468* (MO, NY, VEN not seen); cumbre, parte central de la Mta. SE, 2,560 m, 10–12 Oct. 1983, *Steyermark et al. 129471* (MO, NY, VEN not seen); summit on undulating plateau, S & SE of summit camp, 2,520–2,650 m, 26–27 Feb. 1985, *Steyermark & Holst 130778A* (MO, NY); summit area, 2,750 m, early Feb. 1975, *Tillett et al. 752-344* (VEN: see Maguire et al., 1984).

Schefflera argophylla Frodin, sp. nov. TYPE: Venezuela. Bolívar: Sierra de Maigualida, NW sector, upper tributary of Caño Iguana, 2,000 m, 28 Feb.–3 Mar. 1991, *Berry et al. 4835* (holotype, MO; isotypes, MYF not seen, VEN not seen). Figure 1.

Arbor parva *Schefflerae contractae* arcte accedens, sed ab ea foliolorum venis primariis tenuioribus venis secundariis melius evolutis etiam apice caudato-acuminato differt. *S. guanayensem* simul referens at flores in hac in umbellulas dispositi.

Tree 3–4 m, with a sparse, broad crown (*fide* Huber); innovations initially pale silky pubescent but

Figures 1–4. —1 (Top left). *Schefflera argophylla* Frodin. *Huber 12764* (paratype, K). —2 (Top right), 3 (bottom left). *Schefflera asymmetrica* Frodin. *Stein & Gentry 1585* (holotype, K). —4 (Bottom right). *Schefflera baculosa* Frodin. *Huber 12860* (holotype, K).

twigs and other parts soon glabrous. Leaves digitately compound, 5–7-foliolate, the leaflets usually conduplicately folded; petioles 16–17.5 cm long, the base extending into an acute stipular ligule to 5 cm long; petiolules of unequal length, 1–5 cm long. Blades in a single plane, broadly elliptic to slightly obovate-elliptic, the widest point always somewhat above the middle, the lower part ± narrowed, 5–12.5 cm long, 3–7 cm wide, coriaceous; upper surface dark green, the under silvery-pale green, the contrast in younger leaflets being particularly strong; apex rounded, the tip acuminate to caudate-acuminate, base rounded to slightly cordate; midrib on undersurface conspicuous and contrasting; lateral veins numerous, the primary veins 12–14(–15) on a side, straight, spreading, closely spaced, extending to a marginal vein, in mature leaflets slightly raised from the mesophyll on the undersurface; secondary veins well developed. Inflorescences terminal, erect, twice compound, paniculate, dark purple when fresh and only further darkening when dry, the flowers in pedunculate heads, the axes and peduncles early thinly and conspicuously silky-pubescent but this later wearing off; main axis reduced; primary branches up to 5, mostly ascending to erect, 26–28 cm long, to 3 mm diam.; peduncles closely spaced, persisting in the upper ⅔ of each branch, 7–8 mm long; heads 9–12 mm diam.; flowers 10–15; stamens white; ovary 2-locular. Immature fruits green, 3 mm long, topped by an apically bifid stylar column 0.5 mm long; maturing fruits red.

Schefflera argophylla is most closely related to *S. contracta* from Cerro Jaua and *S. meiurophylla* from Cerro Uasadi. It differs from *S. contracta* by its finer leaflet venation (owing to the secondary veins being better developed) and the tips of the leaflets distinctly acuminate to caudate-acuminate. It differs from *S. meiurophylla* in the oblong-elliptic and usually conduplicately folded leaflets, with the bases rounded to slightly cordate. The three species appear to share a common ancestry, with their nearest relative being *S. jauaensis* Maguire, Steyermark & Frodin.

Schefflera argophylla is superficially similar to *S. guanayensis* Maguire, Steyermark & Frodin, but its leaflet blades are not as noticeably longer than the petiolules, the blades are flat and ± similarly colored on both surfaces, and the flowers are in umbellules.

The genus *Schefflera*, including this species, is a conspicuous element on the Sierra de Maigualida (Otto Huber, pers. comm.). *Schefflera argophylla* has been reported from borders of elfin forest and savanna, and in shrub patches or around rocks. The conduplication of the leaflets resembles that in *S. clausa*, as well as *S. pagiophylla* Harms from high in the mountains of western New Guinea. The specific epithet relates to the contrast between the leaflet surfaces, with the undersurface in particular somewhat silvery pale green.

Paratype. VENEZUELA. **Bolívar:** Sierra de Maigualida, sector NE, ca. 2,100 m, 28 Mar. 1988, *Huber 12764* (K, MYF not seen).

Schefflera asymmetrica Frodin, sp. nov. TYPE: Brazil [as "Venezuela"]. Amazonas: Cerro de la Neblina, ca. 3 km ENE of Pico Zuloaga, 1,900–2,000 m, 17 Apr. 1984, *Stein & Gentry 1585* (holotype, K; isotype, MO). Figures 2, 3.

Arbor *Scheffleram sessilifloram* simulans, sed ab ea foliolis pluribus angustioribus ad basin plus minusve asymmetricis, floribus in umbellula dispositis differt. *S. concolori* cognata, sed haec species a *S. asymmetrica* foliolis crassioribus ad basin symmetricis necnon in statu sicco colore paginae foliolorum discrepans. Foliola extima in *S. asymmetrica* ab medio in magnitudine valde disparans.

Tree 7–8 m, little-branched but with thick twigs; developing leaves initially densely pale tan pubescent but these soon glabrous as all other vegetative parts. Leaves digitately compound, 7–9-foliolate, the leaflets flat; petioles 29.5–65 cm long, drying light, the base extending into a stipular ligule to 1 cm long; petiolules 3–8.5 cm long. Blades in a single plane, narrowly oblong-lanceolate, falcate to oblique to symmetric, the widest point below the middle, 20–39 cm long, 5.2–13 cm wide, thinly coriaceous; surfaces dull, drying relatively light, both about the same color or nearly so; apex acute, the tip insensibly acuminate to caudate for up to 2 cm, base rounded to cordate, usually ± oblique, margins flat; midrib prominent on undersurface; lateral veins on each side 13–15 in addition to a basal vein, slightly conspicuous and about equally well expressed on both surfaces after drying, spreading-ascending, gradually curving before uniting with the marginal vein; cross-veins uneven but developing at an angle of approximately 90° to the midrib in mature leaflets; secondary venation partially developed, extending to about halfway to margin. Inflorescences terminal, erect, twice compound, paniculate, drying dark, the flowers in umbellules, the surfaces initially appressed-pubescent but this for the most part later wearing off except for the receptacle and ovary; primary branches few or apparently reduced to 1, stiff and stout, to 67 cm long and 9 mm diam. at the base; umbellules numerous, ca. 10–15-flowered, closely spaced along the branches, the peduncles

1.5–2.7 cm long. Flowers small, yellow; pedicels 5–6 mm long, each subtended by a minute lanceolate bracteole; corolla not seen; ovary obconic, 2-locular, 1.5–2 mm long, the disk flat, the stylar column as long as or longer, slender. Fruit remaining wholly inferior, 2-pyrenate, flattened, green when immature, 4–4.5 mm long, 3–3.5 mm wide; stylopodium 1.3–1.4 mm across; stylar column 2 mm long, the 2 elements just diverging at apex. Fruit not known.

Schefflera asymmetrica is apparently a tree of slopes below the main escarpments of the Neblina massif. It has distinctively narrow, basally asymmetric leaflets, to which the specific epithet refers. This species is most closely related to *S. concolor*, which also grows on the Neblina massif. Morphologically it is more specialized than *S. concolor*, and apart from the different leaflet shape and venation, has a fewer-branched inflorescence (which may even be reduced to a single branch). The paratype cited below was previously listed as a paratype of *Schefflera reticulata* subsp. *yutajensis* Maguire, Steyermark & Frodin (see Maguire et al., 1984: 59). *Schefflera maguireorum*, with which the earlier of the two available collections of *S. reticulata* subsp. *yutajensis* was formerly associated, is more distantly related, with smaller leaflets and pedicels only about 0.75 mm long.

Paratype. VENEZUELA. **Amazonas:** Cerro de la Neblina [N side], lower escarpment slopes E of Camp 3, 1,600 m, 24 Jan. 1954, *Maguire, Wurdack & Bunting 37379* (K, NY).

Schefflera baculosa Frodin, sp. nov. TYPE: Venezuela. Amazonas: Serranía Uasadi, sector NW, cumbres montañosas ubicadas en las cabeceras orientales del Río Asita, afluente derecho del Río Ventuari, 2,000 m, 22 Nov. 1988, *Huber 12860* (holotype, K; isotype, MYF not seen). Figure 4.

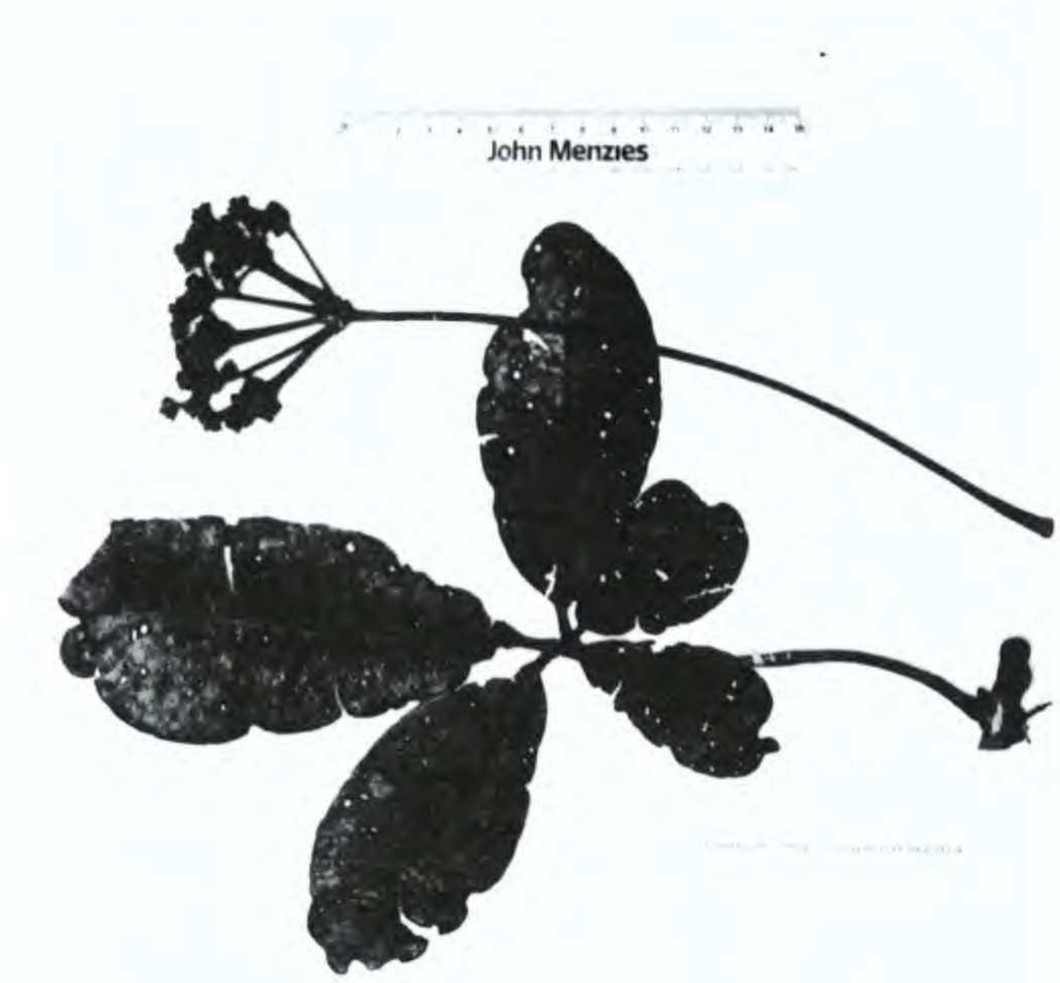
Arbor parva *Schefflerae ulocephalae* arcte affinis sed ab ea foliolis longioribus minus tomentosis vel fere glabrescentibus ad marginem non incurvatis etiam foliolis lateralibus subsessilibus recedit.

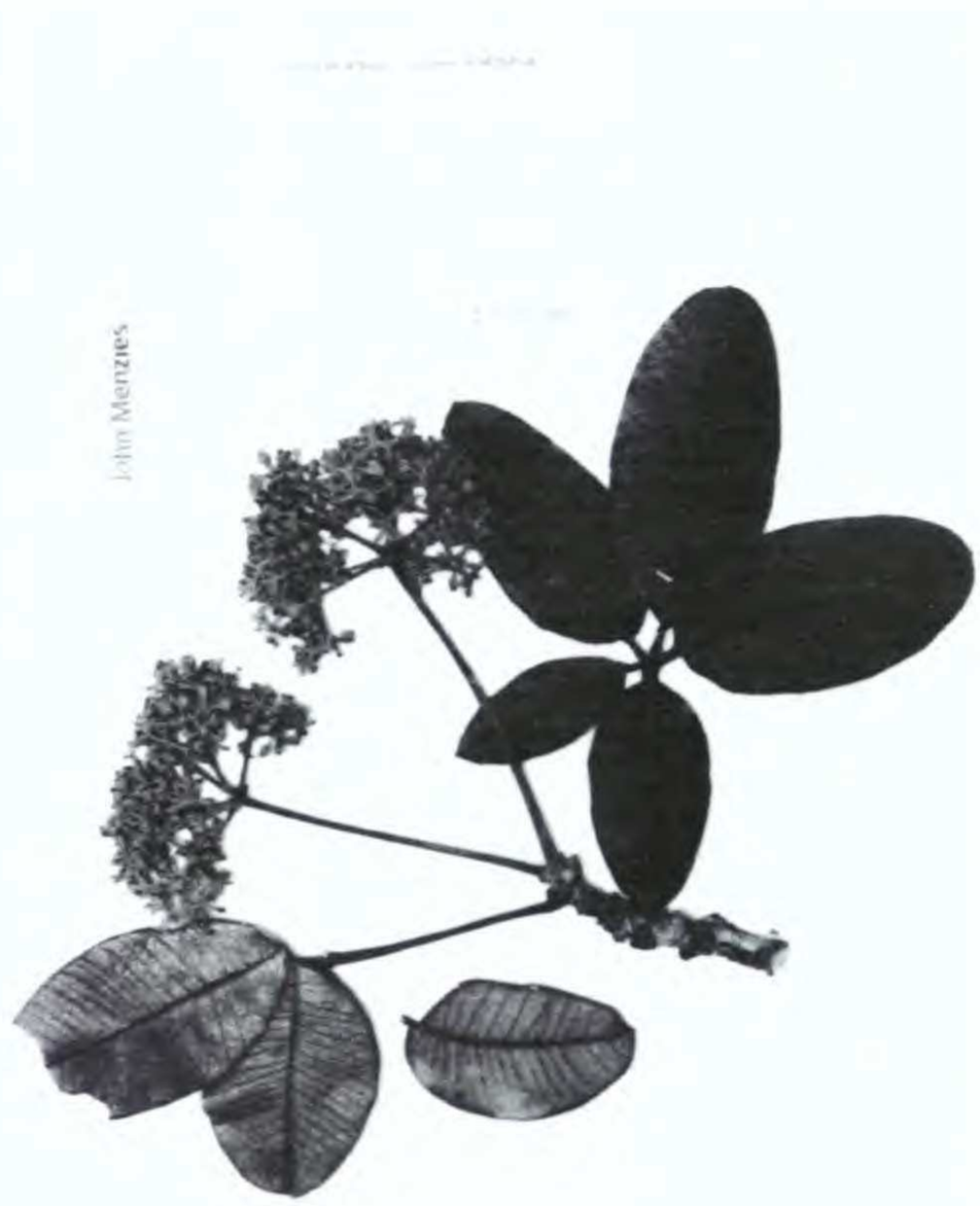
Shrub or tree 2–5 m tall, with flattened, dense crown; twigs 1 cm diam., dark-hairy. Leaves 3-foliolate; petioles about 12 cm long, arising from a broadened base with a free portion only 1–2 mm long; petiolules unequal, the central ones 1.9–2.1 cm long, the lateral ones 0.3–0.6 cm. Blades oblong-elliptic, glabrous and deep green above, undersurface shortly gray-tomentose (maroon-ferrugineous in young leaflets), extending over the venation, 11.9–13.5 cm long, 6.5–7.7 cm wide, coriaceous; apex rounded, tip flattened or slightly retuse, base rounded, symmetrical in central leaflets, oblique in the lateral, margins entire, flat when dry; upper surface somewhat rugose, venation and reticulum slightly recessed, undersurface with prominent, gradually fading midrib and somewhat raised venation; primary lateral veins 14–15 or more, spreading, curving slightly upward, ending in the largely consolidated marginal veins; secondary veins variously developed, ranging from about halfway toward the margin to the full distance; cross-veins not well developed, the reticulation irregular. Inflorescence initially terminal, later pseudolateral, umbellate, three times compound, the bracts persistent; main axis not developed; primary rays ca. 27.5 cm long, 5 mm diam., when dry dark tomentulose; secondary rays 2.7–3.3 cm long, radiating from the ends of primary rays and in a subsidiary whorl of 3 or 4 at some 2.7 cm below; ultimate coflorescences tertiary, with sessile central flowers at ends of secondary rays and (0)1 or 2 immediately adjacent lateral, tertiary, 6-flowered sessile clusters, the peduncles of the latter 1.1–1.5 cm long, brownish to dark tomentulose, the flowers each subtended by a minute bracteole; calyx rim 1 mm wide with 5 teeth; ovary 2- or 3-locular, 2 mm long, buff sericeous-tomentose, the stylar column about 2 mm long. Fruit green to purplish, compressed or angular, to 6 × 6 mm, remaining wholly inferior; stylar column 2 mm or so long, barely bifid or trifid at the apex.

Schefflera baculosa is in general most like *S. huberi*, but differs in its flattened margins, more spreading, less pronounced and finer venation, and more completely united styles in fruit, but most significantly in the sessile flowers. The trifoliolate leaves and sessile flowers resemble *S. ulocephala*, but that species has more pronounced pubescence, the leaflets have incurved margins, the heads (especially at anthesis) are tighter, and the stylar column is shorter.

Schefflera baculosa is one of a group of four closely related species (with *S. brachypoda*, *S. huberi*, and *S. longistyla*) that occur on Serranía Uasadi and nearby Serranía Maigualida. It is known only from the type collection and is reported to be frequent in low forest patches on sloping, rocky ground in summit areas on granite. These patches occur among herbaceous meadows.

Schefflera brachypoda Frodin, sp. nov. TYPE: Venezuela. Amazonas: Sierra de Maigualida, sector NE, altiplanicie tepuyana ubicada en las cabeceras del Río Chajura, afluente occidental del Río Erebato, aprox. 100 km (in línea recta) al SW del Campamento Entreríos, 2,100 m, 28 Mar. 1988, *Huber 12762* (holotype, K; isotype, MYF not seen). Figure 5.





Figures 5–8. —5 (Top left). *Schefflera brachypoda* Frodin. *Huber 12762* (holotype, K). —6 (Top right). *Schefflera chimantensis* subsp. *rugosifolia* var. *iluensis* Frodin. *Huber 12005* (holotype, K). —7 (Bottom left), 8 (bottom right). *Schefflera concolor* Frodin. *Gentry & Stein 46613* (holotype, K).

Arbor parva *Schefflerae ulocephalae* affinis; haec species nova foliis quinque-foliolatis, foliolis elliptico-obovatis etiam inflorescentiis radiorum secundariorum verticillos subsidario carentibus notabilis. Species itidem *S. longistylae* artissime cognata.

Shrub 2–3 m, the crown broad; twigs pithy, 0.9–1 cm across, the surfaces, including the leaf bases, finely tomentulose or glabrescent. Leaves 5-foliolate, the leaflets in a given leaf varying widely in size; petiole 14 cm long, the base broad, sheathing, with 2 distinct stipular lobes each to 5 mm; petiolules 0.3–1.2 cm long. Blades narrowly elliptic to oblong-obovate, glabrous above, light ferrugineous to grayish maroon-tomentulose beneath, 7.5–15.5(–16) cm long, 4–7.6 cm wide, rather coriaceous, the indumentum extending over the venation; apex rounded, tip absent, base broadly acute to obtuse, margins entire, flat, the lower part usually gradually tapering; upper surface slightly glossy, rugose, the venation and reticulum recessed; undersurface somewhat strongly veined, the midrib prominent, decreasing distally; primary and secondary lateral veins all but indistinguishable, in all 27 or 28 on each side, somewhat spreading, curving slightly upward before passing into a fairly well consolidated marginal vein formed from the anastomoses; secondary veins mostly extending to, or nearly to, the margin; cross-veins not regularly developed. Inflorescences initially terminal, later pseudolateral, umbellate, three to (occasionally) four times compound, at least the secondary bracts persistent; main axis not developed; primary rays ± 24 cm long, 3 mm diam., shortly ferrugineous-maroon-tomentose (along with all other reproductive parts), their number unknown; secondary rays about 10, 3.3–4.1 cm long, developing only at the ends of primary rays, subtended by bracts 4–5 mm long; ultimate coflorescences tertiary (occasionally in part developing to quaternary level), with a headlike cluster of central bisexual, fertile, almost sessile flowers at ends of secondary rays and usually 2 lateral, tertiary, ca. 6-flowered, headlike, almost sessile clusters arising immediately below, the peduncles of the latter 10–14 mm long, the flowers each subtended by a minute bracteole; calyx rim 0.5 mm wide, with 5 broad teeth; corolla and stamens greenish yellow, the petals opening from the top and spreading before falling; ovary (2-)3-locular, the disk 2–2.5 mm across after anthesis, the stylar column 1.5 mm long. Immature fruit to 4 × 4 mm, usually 3-angled when dry, heterochronous; stylar column 2 mm long, becoming distinctly trifid (or bifid) above, the arms about 0.5 mm long, curving outwards.

Distinguishing features of *Schefflera brachypoda* among related species are the 5-foliolate leaves, the rather unequally sized, narrowly elliptic to oblong-obovate, somewhat rugose leaflets, the short petiolules, and the almost sessile, mostly 3-carpellate flowers. The inflorescence resembles that of *S. ulocephala*, but differences include the presence of a minute pedicel, narrower calyx rim, a longer stylar column, and a somewhat larger disk; in addition, all the secondary rays are at the ends of the primary rays and the margins of the leaflets are incurved. In *S. ulocephala* there is also a subsidiary whorl of secondary rays, and the disks after anthesis are partly concealed by the calyx rim. A subsidiary whorl also distinguishes *S. baculosa*, which has 3-foliolate leaves with longer-petioluled leaflets and sessile flowers and fruits. The presence of fourth-order umbellules resembles *S. pallens*, but the more repand inflorescences with longer secondary rays (especially those in the subsidiary whorls) and the distinctive whitish indumentum on the undersurface of the leaflets readily distinguish that species.

Schefflera brachypoda is known only from the type collection and is part of the highland tepui vegetation on a plateau in northeastern Sierra de Maigualida, where it is frequent in shrub communities and low forest. So far it has not been found together with *S. huberi* and *S. longistyla*, which have both been collected from the northwestern sector of the same massif but at a lower altitude.

Schefflera chimantensis (Steyermark & Maguire) Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 81. 1984. Basionym: *Didymopanax chimantensis* Steyermark & Maguire, Mem. New York Bot. Gard. 17: 456. 1967. TYPE: Venezuela. Bolívar: Chimantá massif, on slope leading to summit of Apacará-tepui, 2,000–2,150 m, 20 June 1953, *Steyermark 75788* (holotype, NY; isotype, F).

Further study of this and *Schefflera rugosifolia* Maguire, Steyermark & Frodin (*Didymopanax rugosus* N. E. Brown) suggests that only one species is involved, particularly if the plants initially assigned to *Didymopanax multiramosus* Steyermark (Steyermark, 1967) and later merged with *Schefflera chimantensis* (Maguire et al., 1984) are considered in greater detail. More material is presently available than was so during my initial studies in 1969 and 1970, and a wide range of the tepuis in the Gran Sabana uplands are now represented (all within the eastern tepui subdivision; see Huber, 1988: 598, 602). Nevertheless, the differences upon which the original taxa were based can be correlated with distribution and habitat, and a further distinction has been noted between the plants of the Roraima and Ilú groups of tepuis.

The scheme presented here calls for recognition of each of the three original taxa as subspecies, with one, *S. rugosifolia*, further divided into two varieties. Some redeterminations of material cited in 1984 under *S. chimantensis* and *S. rugosifolia* have been made, and are so indicated below. A key to the infraspecific taxa of *S. chimantensis* will appear soon in the *Flora of the Venezuelan Guayana*.

Schefflera chimantensis subsp. **chimantensis**

This subspecies is known only from the Chimantá massif and nearby Angasima-tepui.

Specimens examined. VENEZUELA. **Bolívar:** Macizo del Chimantá, Amurí-tepuy (sector W del Acopán-tepuy), ± 1,850 m, 2–5 Feb. 1983, *Huber & Steyermark 7110* (MO); en la sección SE del Apacará-tepui, ± 2,150 m, 6–9 Feb. 1984, *Huber, Collela & Vareschi 8890* (NY); Macizo del Chimantá, sector sur-occidental, cumbre meridional del Amurí-tepui, ± 2,100 m, 10–14 Mar. 1986, *Huber 11401* (CM, NY); cumbre occidental del Angasi ("Adanta")-tepui, 40 km WNW of Wonken, ± 2,100 m, 9 Aug. 1986, *Huber 11690* (K); Macizo del Chimantá, sector sur-oriental, Churí-tepui, sección centro-suroriental, ± 2,250 m, 6–8 Feb. 1985, *Pipoly et al. 7145* (MO, NY); Macizo del Chimantá, Amurí-tepuy (sector W del Acopán-tepuy), ± 2,200 m, Jan.–Feb. 1983, *Steyermark et al. 128316* (MO); Macizo del Chimantá, sector N; altiplanicie, Apacará-tepui, ± 2,200 m, Jan.–Feb. 1983, *Steyermark et al. 128364* (MO, NY); Macizo del Chimantá, Amurí-tepui (sector W del Acopán), ± 1,850 m, 2–5 Feb. 1983, *Steyermark et al. 128475* (MO, NY); Macizo del Chimantá, Amuri-tepui, sector W del Acopán-tepui, ± 1,850 m, 2–5 Feb. 1983, *Steyermark et al. 128770* (MO); central section of Chimantá massif, Río Tirica, 2,120 m, 12 Feb. 1955, *Steyermark & Wurdack 782* (F, NY).

Schefflera chimantensis subsp. **multiramosa** (Steyermark) Frodin, comb. et stat. nov. Basionym: *Didymopanax multiramosus* Steyermark, Acta Bot. Venez. 2(5–8): 273. 1967, not *Schefflera multiramosa* Elmer, 1914. TYPE: Venezuela. Bolívar: Auyán-tepui, in quebrada below El Libertador, cumbre de la parte S, 2,050–2,300 m, 15 May 1964, *Steyermark 93926* (holotype, VEN not seen; isotype, NY).

This subspecies is known from Auyán-tepui, the Aparamán Range of tepuis to the east (also known as "Los Testigos" and including from west to east Aparamán-tepui, Murisipán-tepui, Tereké-Yuren-tepui, and Kamarkaibaray[or Camarcaibarai]-tepui), Ptari-tepui, and the Chimantá massif.

Additional specimens examined. Venezuela. **Bolívar:** Kamarkaibaray-tepui, al E del Auyán-tepui, 2,400–2,500 m, 25 Mar. 1987, *Delascio 13138* (MO); Murisipán-tepui, summit, 2,300 m, 22 Mar. 1987, *Holst 3524* (MO); Camarcaibarai-tepui, summit, 2,400 m, 26 Mar. 1987, *Holst 3618* (MO); Aparamán-tepui, summit, 2,100 m, Mar. 1987, *Holst 3660* (MO); cumbre del Kamarcawarai-tepui, 2,350 m, 15 Jan. 1986, *Huber & Gorzula 11105* (NY); cumbre del Kamarcawarai-tepui, 2,350 m, 15 Jan. 1986, *Huber & Gorzula 11113* (NY); Ptari-tepui (al N de la Misión de S. Teresita de Kavanayén), cumbre, 2,360–2,420 m, 23 Feb. 1978, *Steyermark et al. 115695* (NY, VEN not seen); cumbre de Auyántepuy, en zanjones, 2,150 m, 3 Feb. 1988, *Delascio & Lopez 13638* (MO); Macizo del Chimantá, Murey(Eruoda)-tepui, cumbre, 2,500 m, 24 Feb. 1978, *Steyermark et al. 115753* (MO, VEN not seen); Aprada-tepui, cumbre, 2,460–2,500 m, 25 Feb. 1978, *Steyermark et al. 115935* (MO, VEN not seen; number miscited as *115753* in Maguire et al. 1984); altiplanicie meridional del Abacapá-tepui, en SW del Macizo del Chimantá, ± 2,200 m, Jan.–Feb. 1984, *Huber & Dezzeo 8640* (MO, NY); cumbre del Aprada-tepui, sector S ubicado ca. 30 km al E de Urimán, 2,500 m, 30 June 1984, *Huber 9542* (NY); Chimantá massif, Churí-tepui, upper part of upper cumbre, 2,300–2,350 m, 3 Feb. 1953, *Wurdack 34309* (K, NY).

Schefflera chimantensis subsp. **rugosifolia** (Maguire, Steyermark & Frodin) Frodin, comb. et stat. nov. Basionym: *Didymopanax rugosus* N. E. Brown [as "rugosum"], Trans. Linn. Soc. ser. 2, Bot. 6: 31. 1901, not *Schefflera rugosa* Harms, 1894. *Schefflera rugosifolia* Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 71. 1984. TYPE: Venezuela [as "Guyana"], Mt. Roraima, 8,600 ft., Oct. 1898, *McConnell & Quelch 663* (lectotype, selected by Maguire et al. (1984), K).

The subspecies *rugosifolia* is known only from the eastern tepui chain, including Ilú-and Tramen-tepui, Yuruaní-tepui, Kukenán-tepui, Roraima-tepui, and Karaurín-(or Caraurín-)tepui.

Schefflera chimantensis subsp. **rugosifolia** var. **iluensis** Frodin, var. nov. TYPE: Venezuela. Bolívar: ladera SW del Caraurín-tepui, ± 1,950 m, 21 Feb. 1987, *Huber 12005* (holotype, K; isotype, MYF not seen). Figure 6.

A var. *rugosifolia* foliis 3–5-foliolatis foliolisque lateralibus externis distincte petiolulatis recedit.

Variety *iluensis* differs from the nominate variety in having (3-)4-or 5-foliolate leaflets with the petioles of the lateral leaflets distinctly developed. In variety *rugosifolia* the leaves are mostly 3-foliolate (rarely 4-foliolate), and the petioles of the lateral leaflets are generally almost obsolete.

Additional specimens examined. VENEZUELA. **Bolívar:** Ilú-tepui, cumbre, sector central-meridional, 2,630 m, 29 Apr. 1984, *Huber 9500* (NY); cumbre del Tramen-tepui (porción más NW del Macizo de Ilú-tepui), 2,650 m, 23 Jan. 1985, *Huber 10051* (NY); cumbre surocci-dental del Ilú-tepui, 2,700 m, 18 June 1985, *Huber & Alarcón 10599* (CM, NY); cumbre del Caraurín-tepui,

al S del Ilú-tepui, ± 2,450 m, 21 Feb. 1987, *Huber 12023* (K, MYF not seen); Ilú-tepui, saddle between North Peak and Central Plateau, 2,400 m, 15 Mar. 1952, *Maguire 33425* (K, NY).

Schefflera chimantensis subsp. **rugosifolia** var. **rugosifolia**

Additional specimens examined. GUYANA. Mt. Roraima, 6,500–7,000 ft., 26 Mar. 1978, *Peter J. Edwards KER.128* (K). VENEZUELA. **Bolívar:** Mt. Roraima, summit area, 2,750–2,800 m, 26 Aug.–2 Sep. 1976, *Delascio & Brewer-Carías 4812* (VEN, cited by Maguire et al., 1984); cima del Roraima, 2,810 m, Sep. 1982, *Delascio & Clemants 11883* (MO); cumbre del Yuruaní-tepui, ± 12 km NNE del Kukenán-tepui, 2,200 m, 29 Feb. 1984, *Huber 9093* (MO, NY); Kukenán(Matauí)-tepui, cumbre meridional cerca de la punta S del tepui, 2,700 m, 15 June 1985, *Huber & Alarcón 10545* (NY); Yuruaní-tepui, cumbre oriental, 2,300 m, 8 Sep. 1986, *Huber 11812* (K, MYF not seen); Mt. Roraima, 7,600 ft., 31 Oct. 1973, *Persaud 132* (K, NY); cima del Roraima-tepui, cerca del camino de ascenso, 2,500 m, 4 May 1986, *Picón-Nava 1125* (K); Mt. Roraima, summit area, NW portion, N & NW of Summit Camp, 2,620–2,740 m, 27 Sep. 1944, *Steyermark 58824* (NY); Mt. Roraima, summit area, 2,750–2,800 m, 26 Aug.–2 Sep. 1976, *Steyermark et al. 112444* (NY); Mt. Roraima, summit, 2,850 m, Oct. 1927, *Luetzelberg 21568* (M); Mt. Roraima, summit, 24 Nov. 1927, *Tate 370* (NY); Mt. Roraima, "auf dem Gipfel," ca. 2,700 m, Dec. 1909, *Ule 8705* (G, K, L); Auyán-tepui, cumbre, sector suroriental, 2,140 m, 26 Feb. 1978, *Steyermark et al. 116047* (MO, VEN not seen).

Schefflera clausa Frodin, sp. nov. TYPE: Venezuela. Bolívar: Meseta de Jaua, Cerro Jaua, cumbre, S part, 2,000 m, 27 Feb. 1974, *Steyermark, Carreño & Brewer-Carías 109629* (holotype, K; isotypes, MO, NY, US, VEN not seen).

Arbor parva *Scheffleram crassilimbam* referens, sed haec species nova petiolulis brevibus (0.3–)0.6–2.0 cm longis, foliolorum 8–10 venis ad paginam infernam vix elevatis, inflorescentiis tri-vel quadriramosis umbellulisque 7–9-floris notata. Ab *S. guayanensi* petiolulis brevioribus necnon foliolorum pauciorum costis marginibusque purpureis differt.

Tree 2.5–5 m, glabrous except for inflorescences and their basal bracts; stems pithy, 9 cm thick below apex. Leaves digitately compound, 8–10-foliolate, the leaflets usually conduplicately folded; petioles (4.5–)10–20 cm long, drying dark brown to red-brown, the base extending into a stipular ligule 0.5–0.6 cm long; petiolules (0.3–)0.6–2 cm long. Blades in a single plane, narrowly elliptic to oblanceolate to oblong-elliptic to elliptic-oblanceolate, about 12 cm long, 3.5 cm wide, relatively coriaceous; surfaces dull, somewhat contrasting, the lower pale olive when dry (when fresh deep green above, pale green to silvery below); apex acute, passing into an acuminate or shortly caudate tip, base shortly and abruptly rounded, margins flat; midrib and marginal vein purplish, sharply contrasting with mesophyll but not markedly raised below; lateral veins on each side 13–16, ± parallel, spreading, extending to and joining the marginal veins, not contrasting with and only barely raised above mesophyll below, paler than mesophyll above; secondary lateral veins and reticulation obscure, not contrasting. Inflorescences terminal, twice compound, paniculate, drying dark, the flowers in umbellules, the surfaces pubescent; primary branches 3 or 4, 33–60 cm long, divaricately spreading, glabrescent after anthesis, the basal bracts broadly lanceolate, 1 cm long; umbellules ca. 40–60, ca. 7–9-flowered, closely spaced along the upper ¾ of branches, the peduncles 0.6–1.5 cm long. Flowers small, ca. 2.5 mm long in bud, the calyx rim at or below middle, the ovary and pedicels pale to olive green; pedicels at anthesis very slender, 3–6 mm long; calyx rim scariose, thrust outwardly after anthesis, wavy with 5 small teeth; corolla greenish yellow, splitting from the apex into 5 petals, these spreading before falling; filaments greenish yellow or greenish white; anthers yellow; ovary after anthesis 2.5 mm long, obconic, the disk flat and topped by a stylar column ca. 2 mm long, this divaricating at top into two stigmatic arms. Fruit pale flesh with pale green (as once reported), wholly inferior, appearing flattened, 5 mm long, 7 mm across, the calyx rim persistent, the stylar column with spreading stigmatic arms each 0.5 mm long.

Schefflera clausa is a distinctive species within the "Cheilodromi" group. The paratypes cited below were previously associated by Maguire et al. (1984) with *Schefflera guanayensis* Maguire, Steyermark & Frodin subsp. *guanayensis* and with *Schefflera guanayensis* subsp. *paruensis* Maguire, Steyermark & Frodin (now treated as a distinct species, *S. paruana*). *Schefflera clausa* differs from *S. guanayensis* in having fewer, often conduplicately folded leaflets, petiolules that are shorter and more congested, less prominent veins on the undersurface, longer pedicels, and, after anthesis, a more uniformly slender stylar column. The midrib and marginal vein may also be markedly purplish, thus contrasting with the pale mesophyll of the blades.

From *Schefflera pedicelligera* of Cerro Duida *S. clausa* differs in having more, somewhat smaller, and differently shaped leaflets (which are relatively pale when dry and usually conduplicate), 3 or 4 primary inflorescence branches with, on average, more umbellules along each, and considerably longer peduncles. Other species in which the leaflets show

conduplicate folding are *S. argophylla* and *S. contracta;* both of these, however, have the flowers in heads.

Schefflera clausa is confined to the Meseta de Jaua mountain complex. It is thus the most easterly among the members of its series in which the flowers are distinctly umbellulate. It is known to occur in dwarf forest in gullies or at the edge of meadows in summit areas.

Additional specimens examined. VENEZUELA. **Bolívar:** Meseta de Jaua, Cerro Sarisariñama, cumbre, porción NE, 1,380 m, 11–12 Feb. 1974, *Steyermark, Carreño & Brewer-Carías 108965* (K, NY, VEN not seen); Cerro Guanacoco, cumbre, porción NW, 1,450 m, 3 Mar. 1974, *Steyermark, Carreño & Brewer-Carías 109752* (K, NY, VEN not seen).

Schefflera clavigera Frodin, sp. nov. TYPE: Venezuela. Bolívar: Ptari-tepui, slopes and rocks in vicinity of "Cave Rock Camp" below S face, 1,600–2,000 m, 14–19 Aug. 1970, *H. E. Moore, Jr. et al. 9767* (holotype, NY; isotypes, BH, DAV, MICH, MO, UC, US, VEN not seen). Figure 10.

Arbor parva vel modice altior aliquantum *Schefflerae umbellatae* similis sed per paginas supernas foliolorum in statu sicco laeves, venas in paginis inferioribus patentes atque parum claras, internas satis parallelas, stylos 3–4 mm longos in 1 mm apicali liberos, et ovarium bi-vel triloculare recedit.

Shrub, treelet, or small to medium-sized tree 1.5–7(–12) m, the trunk with a diameter to 7.5 cm (or possibly more). Leaves (3)4–8(9)-foliolate (possibly also unifoliolate in very young plants); petioles 12–22.5 cm long, the clasping bases to 1.6 cm across but not extending into a distinct stipular ligule; petiolules stout, 0.5–2.5(–3) cm long, not varying greatly within a given leaf. Blades narrowly obovate to obovate to slightly oblong-obovate, glabrous and usually ± glossy and smooth-looking above, finely and densely appressed silvery-sericeous or buff-hairy below, (7–)9–14(–15.5) cm long, (2.5–)3.4–8(–8.5) cm wide, rather coriaceous; apex broadly obtuse to shallowly emarginate, the tip absent or very short, base cuneate to obtuse, smoothly decurrent into petiolule, margin uniform, ± incurved; midrib relatively dark, prominent and strongly raised below; primary and other lateral veins many, closely parallel, spreading at an angle of 60°–70° to the midrib, usually relatively inconspicuous, somewhat divaricating toward margin and looping and anastomosing at some 2 mm distant from it. Inflorescences morphologically terminal (but by maturity appearing somewhat pseudolateral), compound-umbellate, of stout aspect; primary rays 3–5, the axes gray to gray-green when fresh but generally drying dark, glabrescent during maturation, (21–)24–39 cm long, to 8 mm diam. toward base, sometimes featuring a glaucous bloom but without a subsidiary whorl or whorls of secondary rays (except in *Steyermark 93924*, see below); secondary rays 13–25 or more, also stout, all apical, 2–4.5 cm long, spreading to erect, crowded together and, with the succeeding axes and flowers, appearing clublike; secondary bracts deciduous; ultimate coflorescences tertiary (except in *Pipoly et al. 7251*, see below), diadochogamous (successive unions), entirely terminal, the central pedicels ca. 3–4 mm long, subtended usually by 2 pedunculate umbellules; outer peduncles (tertiary rays) of these lateral umbellules 1–1.1 cm long, bearing fourth-order pedicels about 3 mm long. Flowers congested; corolla yellow-green, petals and stamens 5; filaments green to creamy, anthers yellow; ovary green, 2- or 3-locular, the styles green, 3–4 mm long, free from one another in the last 1 mm. Maturing fruits wholly inferior, initially green; body to 5 × 5 mm, surmounted by a constricted calyx rim with its free portion ca. 1.5 mm wide and bearing 5 small teeth; stylar column ca. 3.5–4 mm long, sometimes with 2 but more often with 3 ± spreading branches at top.

The first collection of this plant was made by Julian Steyermark on Ptari-tepui in 1944; he determined it and one subsequent gathering from nearby Carrao-tepui as *Schefflera umbellata* (Steyermark, 1957), apparently accepting a large range in leaflet number. This determination was maintained for a later record from Auyán-tepui (Steyermark, 1967). Although in 1969 or 1970 I suggested these plants might be a distinct species, Steyermark did not accept this, noting "I do not see separable differences between these specimens and the others cited under *S. umbellata*, and regard [these plants] as conspecific with *S. umbellata*" (from my notes on the present species; copy in NY). I have chosen *Moore et al. 9767* as the type because it is widely distributed among herbaria and it originates from the same tepui as the earliest known record, *Steyermark 59745*.

Since the end of the 1960s, many more collections of *S. clavigera* and *S. umbellata* have been made, and the differences I originally perceived have largely held. In *S. clavigera*, the leaflets are more distinctly obovate (vs. widest closer to the middle of the leaflets in *S. umbellata*, with a more pronounced apex), their upper surfaces have a smoother appearance when dry (vs. ± sunken in *S. umbellata*), and the venation on the undersurface is generally finer and less conspicuous with the subsidiary ve-

nation more distinctly parallel, while the fruits have only 2 or 3 pyrenes (vs. 3–5) and a longer stylar column to 4 mm long (vs. 2.5–3 mm) with free portions to 1 mm (vs. barely 3–5-fid at the apex).

Steyermark (1967: 275–277) amply summarized the differences that *Schefflera umbellata* and the then included *S. clavigera* show with the related *S. coriacea*. The relationship, though, is surely more distant than between the sister species of *S. clavigera* and *S. umbellata*.

Schefflera clavigera is variable most evidently in leaflet number, the indumentum, and the degree of expression of the lateral veins on the undersurface of the leaflets and the amount of gloss above. Nevertheless, plants are usually readily distinguishable from *S. umbellata*. No correlations among character states have been detected that might be congruent with geographical differences within the species' range. *Pipoly et al. 7251*, however, has an extra reiteration in the ultimate coflorescences, with the central array of flowers at the fourth order and the subtending side peduncles bearing fifth-order umbellules of male or hermaphroditic flowers (comparable to *S. auyantepuiensis*). Also, *Steyermark 93924* has a more finely sericeous indumentum, indistinct veins, and, most notably, primary inflorescence rays each with one subsidiary whorl of secondary rays; this last feature was also noted by Steyermark (1967).

Schefflera clavigera is a sometimes common inhabitant of tepui forest and scrub, where it is associated with *Bonnetia roraimae* and *B. steyermarkii*, apparently most often occurring on lower-lying ground, sometimes along creeks in swales as well as on lower slopes. It is not known yet whether it is less common on Auyán-tepui than on the Chimantá massif, but on Auyán-tepui the presence of the similar-looking *S. auyantepuiensis* (an endemic species there) in comparable habitats should be accounted for. The two species were once collected at nearly the same time and place (*Steyermark 116010*, *S. clavigera*, and *Steyermark 116020*, *S. auyantepuiensis*, both at 2,140 m in the southeastern part of the plateau).

Paratypes. VENEZUELA. **Bolívar:** Auyán-tepui, 2,500 m, Jan. 1949, *Cardona 2685* (US, VEN not seen); Auyán-tepui, near quebrada of "Boggy Camp" below El Libertador, 2,050–2,300 m, 15 May 1964, *Steyermark 93924* (NY, VEN not seen); Auyán-tepui, cumbre, sector sur-oriental, 2,140 m, 26 Feb. 1978, *Steyermark et al. 116010* (MO, VEN not seen); Auyán-tepui, summit area, 2,300 m, Apr. 1956, *Vareschi & Foldats 4836* (NY, VEN not seen); Camarcaibarai-tepui, 2,300 m, 26 Mar. 1987, *Holst 3634* (MO); Camarcaibarai-tepui, SW-facing shoulder, 1,800–1,825 m, 22–24 May 1986, *Steyermark, Liesner & Holst 132024* (MO, NY, VEN not seen); Tereké-Yuren-tepui, summit, W edge, ± 2,100 m, 26 May 1986, *Liesner, Steyermark & Holst 21120* (MO); cumbre del Kamarcawarai-tepui, 2,350 m, 15 Jan. 1986, *Huber & Gorzula 11097* (MO, NY); Carrao-tepui, 2,470–2,500 m, 7 Dec. 1944, *Steyermark 60904* (F, US); Ptari-tepui, SW-facing shoulder, 2,000–2,200 m, 2 Nov. 1944, *Steyermark 59745* (F, NY); Chimantá massif, Abácapa-tepui, NW part, 2,125–2,300 m, 13 Apr. 1953, *Steyermark 74897* (F, NY); Abácapa-tepui, E-central portion of summit, in deep fissures, 2,120 m, 11 Feb. 1955, *Steyermark & Wurdack 716* (F, NY); base N de los farallones superiores del Amurí-tepui, Chimantá, 1,950 m, 2–5 Feb. 1983, *Steyermark et al. 128613* (MO, US, VEN not seen); Amurí-tepui, Macizo de Chimantá, ± 2,100 m, 4–6 Mar. 1986, *Huber 11414* (CM, MYF not seen, NY); Cerro Apacará, 2,100 m, 8 July 1946, *Cardona 1580* (US, VEN not seen); sector SE del Apacará-tepui, Macizo de Chimantá, ± 2,150 m, 6–9 Feb. 1984, *Huber et al. 8824* (MO, NY, VEN not seen); Apacará-tepui, Macizo del Chimantá, ± 2,150 m, 6–9 Feb. 1984, *Huber et al. 8887* (MO, MYF not seen, NY, US); Apacará-tepui, sector C-N, ± 2,150 m, 11–14 Mar. 1986, *Huber 11545* (MO, MYF not seen, NY); Apacará-tepui, above SE-facing upper shoulder on slope going to summit, 2,000–2,150 m, 20 June 1953, *Steyermark 75802* (F, MO, NY); Apacará-tepui, E-central portion of summit, in deep fissures, 2,450–2,500 m, 21–22 June 1953, *Steyermark 75890* (F, NY); Apacará-tepui, sector N del Macizo de Chimantá, altiplanicie, ± 2,200 m, 28 Jan. 1983, *Steyermark et al. 128317* (MO, VEN not seen); Apacará-tepui, sector N del Macizo de Chimantá, altiplanicie, 2,200 m, 28 Jan. 1983, *Steyermark et al. 128314* (MO, VEN not seen); Churí-tepui, in lower part of lower W cumbre, 2,100–2,200 m, 24 Jan. 1953, *Wurdack 34196* (K, NY); Macizo de Chimantá, sector centro-meridional, ± 2,100 m, Feb. 1985, *Pipoly et al. 7251* (MO, NY, US); Macizo de Chimantá, sector centro-NE del tepui, ± 2,000 m, 26–29 Jan. 1983, *Steyermark 128160* (MO, VEN not seen); Macizo de Chimantá, sector centro-NE del tepui, ± 2,250 m, 26–29 Jan. 1983, *Steyermark et al. 128059* (MO, NY, US, VEN not seen); Macizo de Chimantá, sector E del tepui, ± 2,200 m, 7–9 Feb. 1983, *Steyermark et al. 128986* (MO, US, VEN not seen).

Schefflera clusietorum Frodin, sp. nov. TYPE: Venezuela. Amazonas: Cerro de la Neblina, Río Yatúa, in "moss forest" 2–3 km S of Camp 3 [on N slopes of the massif], 700–800 m, 26 Dec. 1953, *Maguire, Wurdack & Bunting 36904* (holotype, K; isotype, NY).

Arbor procera *Scheffleram japurensem* simulans, sed ab ea paginis infernis foliolorum in tempore minus sericeis atque venis lateralibus subobscuris magis patulis (ad angulam 75° ad 80°), inflorescentiarum internodiis supremis radiorum secundariorum 5–12 mm longis differt. Species bella sed ut videtur localissima.

Tree 6–12 m tall; twigs appressed-hairy, 0.7–0.8 mm diam. Leaves usually 7-foliolate. Blades narrowly elliptic or oblong-elliptic, the surfaces when dry not strongly contrasting, 7.2–16 cm long, 2.4–6.5 cm wide, somewhat coriaceous; apex obtuse or

slightly emarginate, the tip absent, base obtuse, margins somewhat narrowly wavy, unbroken; upper surface glabrous; undersurface finely and inconspicuously hairy, but not distinctly sericeous; midrib conspicuous on both surfaces, though distinctly raised only below; primary lateral veins about 15, spreading at an angle of 70°–80° to the midrib, not impressed when dry on the upper surface, barely raised and rather inconspicuous below; secondary lateral veins always parallel to the primary veins and as inconspicuous. Inflorescence terminal, compound-umbellate; primary rays 4, glabrous or sparsely hairy, 28–36 cm long, without a subsidiary whorl of secondary rays; secondary rays all apical, 9–11, 4.5–6.4 cm long; ultimate coflorescences diadochogamous, comprising a central umbellule at the end of the rays and 2 pedunculate lateral umbellules emerging opposite one another and 0.5–1.2 cm below the ray ends, the whole dully sericeous. Buds pale green; flowers otherwise as *S. japurensis*.

Schefflera clusietorum is most closely related to *S. japurensis*, with which it was included by Maguire et al. (1984). It can be distinguished from that species by the leaflet shape (here more oblong and lacking a tip, the apex being quite obtuse or emarginate), the smooth, uniform upper surface and (at maturity) less sericeous undersurfaces, the angle of the lateral veins (here at 75°–80° to the midrib, as opposed to 70° or less in *S. japurensis*) and their inconspicuousness on the undersurface (usually in *S. japurensis* they are distinct, contrasting with the mesophyll and slightly raised), and, in the ultimate coflorescences, the upper internode on the secondary rays is 0.5–1.2 cm (in *S. japurensis*, 0–0.6 cm). The upper surface of the leaflets is dull, especially when compared with the glossy surface usually seen in *S. japurensis*.

Schefflera clusietorum is known only from the type collection, made in a *Clusia* "moss forest." The existence on the Neblina massif of what seems to be a possibly derived sister species of the widely ranging *S. japurensis*, which lacks other immediate relatives, lends support to the idea that it is the richest of all the Guayana massifs (J. Wurdack, pers. comm.). *Schefflera japurensis* has also been collected there at comparable altitudes, once in Cañon Grande and once on Serra Pirapucú just to the south of Neblina in Brazil.

Schefflera concolor Frodin, sp. nov. TYPE: Brazil [as "Venezuela"]. Amazonas: Cerro Neblina, Pico Phelps, S face, steep cliffs, 1,550–1,650 m, 13 Apr. 1984, *Gentry & Stein 46613* (holotype, K; isotypes, MO, US). Figures 7, 8.

Arbor *Schefflerae sessiliflorae* non dispar, sed haec species nova petiolulis brevioribus (tantum ad 45 mm longis), venis lateralibus conspicuioribus, et floribus umbellatis notabilis. A *S. asymmetrica* foliolorum apice magis abrupte acuminato, lamina concinna crassioreque, et venis lateralibus strictioribus differt.

Tree 10 m, the twigs thick. Leaves digitately compound, 6- or 7-foliolate, the leaflets flat; petiole 28 cm long, 5 mm diam. near base, drying relatively dark, glabrous or with a very few scattered appressed hairs, the base extending into a well-developed stipular ligule to 2 cm long; petiolules 2.6–4.5 cm long. Blades in a single plane, oblong-elliptic, symmetrical, broadest point near the middle, 19–21 cm long, 6.4–7.8 cm wide, stiff when dry, coriaceous; surfaces drying relatively light, both about the same color or nearly so, the upper surface slightly shining, the underside slightly glossy; apex acute to subobtuse, the tip abruptly acuminate or shortly caudate, 0.7–1 cm long, base subtruncate and somewhat cordate, margins wavy in two planes; midrib relatively prominent below, drying somewhat darker than the mesophyll; lateral veins 11–14 on a side in addition to a basal vein, moderately conspicuous, more distinctly raised on the undersurface than the upper when dry, moderately diverging, relatively straight or slightly curving up toward margin before uniting with the marginal vein; subsidiary lateral venation irregularly developed, soon giving way to ± parallel cross-venation oriented almost perpendicularly to the midrib, at an angle of 100° or so in mature leaflets. Inflorescences presumably terminal, twice compound, paniculate, drying dark, the flowers in umbellules; main axis apparently scarcely developed; primary branches probably about 6–8, stiff and stout, diverging, 45–56 cm long, 4–5 mm diam. near base, each subtended by lanceolate basal bracts to 2 cm long; umbellules ca. 60–80 in the upper ¾ of each branch, ca. 20–24-flowered, almost headlike, closely spaced, the peduncles comparatively slender, finely appressed-hairy, 1.4–2 cm long, each subtended by an inconspicuous bract 1.5–2 mm long. Flowers small, congested, green; pedicels slender, 2.5–3 mm long; after anthesis ovary externally appressed-hairy, 0.6–0.7 mm long, the stylopodium about 0.3 mm diam., topped by an apparently undivided stylar column 0.9–1 mm long; locules 2. Fruit not known.

Schefflera concolor is most closely related to *S. asymmetrica*, also growing on the Neblina massif. From that species it differs most evidently in having thicker, symmetrical leaflets with more contrasting surfaces, an apex with a more abruptly formed tip, and straighter, more robust primary lateral veins;

the inflorescence is characterized by shorter pedicels, more flowers in each umbellule and (possibly) more primary branches. Somewhat more distant may be *S. pedicelligera*, but in that species the leaflets are smaller and the flushes have a more lax, open aspect, particularly evident in the inflorescence.

Both *Schefflera concolor* and *S. asymmetrica* share several character states with a range of species in a wide variety of lineages. The basic architecture of leaf and inflorescence is similar to that of *S. morototoni*, but in that species the venation and indumentum details are quite different and the inflorescence is usually fewer-branched and three times compound. The paniculate inflorescence with long branches radiating from a very short main axis and bearing racemosely arranged umbellules is widespread, also occurring in the Old World; but a species such as *S. oblonga* Craib (Thailand, Peninsular Malaysia) has leaflets with very different venation and partially superior fruits. The unique leaflet character for *S. asymmetrica* and the majority of other species with twice compound paniculate/racemose inflorescences is the marginal vein to which all lateral veins join without (or nearly without) curving.

An examination of the maps in Brewer-Carías (1988) suggests that *Gentry & Stein 46613*, the only known collection of the species, although labeled as from Venezuela was obtained just south of the Venezuelan–Brazilian border, which passes along the southern rim of the massif and over Pico Phelps. The habitat was described as a "bromeliad zone on steep cliffs," which implies at least a partially open situation. At 1,550–1,600 m, it was collected somewhat below the presently known average altitude for *S. asymmetrica*.

Schefflera contracta Frodin, sp. nov. TYPE: Venezuela. Bolívar: Cerro Jaua, cumbre in west-central part of meseta, 1,922–2,000 m, 22–27 Mar. 1967, *Steyermark 97978* (holotype, NY; isotype, VEN not seen).

Arbor parva *Schefflerae jauaensi* arcte cognata, sed ab ea foliis et ramis inflorescentiae et capitulis omnis minoribus recedit; *S. argophyllae* foliolorum dimensionibus similis. *S. guanayensem* itidem in facie referens at in hac flores in umbellulas dispositi.

Tree 8 m tall. Leaves 6- or 7-foliolate; petiole glabrous, fairly stout, originally dull purplish maroon, dark when dry, ca. 17.5 cm long, the base extending into a stipular ligule 1.5–2 cm long, ± thickly silvery-lanuginose when young; petiolules 1.2–4 cm long, thick, appearing short in relation to the blades. Blades ± oblong-elliptic, usually widest near the middle, very stiff and hard, dark green above, silvery or pale green below when fresh, comparable in size to *S. argophylla* and as in that species apparently ± conduplicately folded in life, glabrous except for a tomentose indumentum on the undersurfaces of young leaflets; apex obtuse to rounded, the tip abruptly and very shortly acuminate, base usually cordate, margins unbroken or nearly so, flat; upper surface when dry ± shining, dark, the veins not very conspicuous; lower surface paler, the midrib very prominent but the lateral veins rather less marked; primary lateral veins 12–17 or more on each side, spreading, extending ± straight to the marginal vein; secondary veins variously developed but usually extending ½–⅔ way to margin, followed usually by 1 cross-vein oriented at right angles to the midrib. Inflorescences apparently similar to *S. argophylla*, axes and peduncles dull purplish maroon when live; primary branches relatively slender, ca. 10 cm long, glabrous except for silvery-lanuginose hairs toward the base, bearing racemosely arranged capitula in the upper ⅗; peduncles glabrescent, 7–9 mm long, subtended by bracts 2 mm long; capitula ca. 5 mm across, 10–12-flowered; calyx rim narrow, 5-toothed; ovary 2-locular, the disk flat; styles in immature fruit < 0.5 mm long, partly united.

Schefflera contracta was originally identified as *S. jauaensis* (as *S. reticulata* subsp. *jauaensis*), but it can be distinguished from that species by its smaller leaves and inflorescences and fewer-flowered heads. Until recently the basic combination of character states represented was known only from the one collection; however, within the last five years additional collections have been made that show it to be part of a superspecies, or monophyletic alliance, with members from the Serranía Uasadi (*S. meiurophylla*) and the Sierra de Maigualida (*S. argophylla*). *Schefflera contracta* is more closely related to them than it is to *S. jauaensis*. It differs from *S. meiurophylla* mainly in the conduplicately folded oblong-elliptic leaflets. Its venation and reticulation are, on the other hand, more comparable with it than *S. argophylla*. As for *S. argophylla*, the differences with *S. contracta* are chiefly in the leaflet shape, apex, and venation; here the secondary lateral veins are less well developed and the leaf tips hardly expressed. Also, the leaflets show less contrast when dry.

Schefflera coriacea (Marchal) Harms, in Engler & Prantl, Nat. Pflanzenfam. III 8: 37. 1894. TYPE: Venezuela. Bolívar: Mt. Roraima, *Im Thurn 128* (holotype, K).

Oreopanax coriaceus J. Decaisne & Planchon, cited in the synonymy of *Schefflera coriacea* in Maguire et al. (1984), refers not to the present species but to a true *Oreopanax* from Colombia represented by *Triana 190* (Seemann, 1865). The type of *Schefflera coriacea* subsp. *neblinae* Maguire, Steyermark & Frodin is, in addition to being geographically remote from the range of the nominate taxon, sufficiently distinct to merit specific rank. The plant is renamed later in this paper as *Schefflera neblinae*. The list of specimens cited under *S. coriacea* in Maguire et al. (1984) should also exclude *Steyermark 90225*, which is *S. japurensis*.

Schefflera cracens Frodin, sp. nov. TYPE: Venezuela. Bolívar: Ilú-tepui (Gran Sabana), ridge E of Mesa Grande, 1,650 m, 9 Mar. 1952, *Maguire 33323* (holotype, K; isotypes, NY, VEN not seen). Figure 9.

Arbuscula praeruptorum montanorum *Schefflerae monospermae* arcte cognata sed ab ea foliolis ad apicem acutis, inflorescentiis diffusioribus, radiis secundariis posterior 3–8.2 cm longis et pedicellis umbellularum ultimarum 15–18 mm longis differt.

Shrub or tree 2–4 m, of sparse habit, glabrous throughout but in some cases glaucous; twigs ca. 4 mm diam. when dry, emitting a strong odor on cutting. Leaves mainly trifoliolate (occasionally unifoliolate or 4- or 5-foliolate), the leaflets flat; petiole 4.6–7 cm long, slender, rather sulcate when dry; stipular ligule at base reduced; petiolules 0.6–1.9 cm long. Blades in a single plane, elliptic, 3.8–7 cm long, 1.2–2.1 cm wide, thinly coriaceous, not or but slightly contrasting when dry; surfaces ± shiny above, probably slightly shiny below; apex acute, recurving slightly into a somewhat bluntly acuminate tip, base acute, decurrent, margin shortly inrolled; midrib alone slightly raised on the undersurface, paler than the mesophyll; main veins ca. 9 or 10 on a side, ascending, fairly straight, extending to margin with some once bifurcating, more clearly visible above than below; secondary veins well developed and almost indistinguishable from the primary veins. Inflorescence pseudolateral, the base bypassed by the continuation shoot, all the axes, peduncles, and pedicels reddish maroon; primary rays 4, 16–17 cm long, elegantly curving upward; secondary rays ca. 12–13, 3–8.2 cm long, extending in all directions; ultimate coflorescences umbellate, diadochogamous, the 4–6 inner rays merely pedicellate, 8–18 mm long, the outer one or (usually) two pedunculate, of similar length, bearing quaternary umbellules with 5 or 6 very slender pedicels 7–9 mm long. Buds 2 mm long. Calyx rim about 1 mm diam.; corolla glabrous, 1 mm long, the apex shortly beaked, the petals separating from above and spreading before falling; stamens creamy white; ovary 1 mm long, widening slightly below the calyx rim, pseudomonomerous. Fruit similar to *S. monosperma*, wholly inferior, flattened, light green, oblique, developing only on one side, 4.5 mm long, 2.5–3 mm wide (up to 5 mm when fresh), the rim not increasing in width; stylar column slender, lax, 0.8 mm or so long.

Maguire et al. (1984) first suggested that among material then assigned to *Schefflera monosperma* two species might be represented. Further collections, including an additional record from Caraurín-tepui, have strengthened the case for this argument. Following reexamination of the type of *S. monosperma*, I here describe the Ilú plant and Caraurín plant as a new species. *Schefflera cracens* differs from *S. monosperma* in the more lax inflorescences, with longer secondary rays and pedicels, and in the leaflet apices being acute rather than obtuse or emarginate. The secondary rays are 3–8.2 cm long, the pedicels 8–18 mm long; in *S. monosperma* the corresponding units are 2–5 cm and 5–10 mm. There is also a tendency for *S. cracens* to be trifoliolate, whereas in *S. monosperma* the leaves are usually 5-foliolate. Still, the two species appear to be very closely related; like the African pair *S. umbellifera* (O. W. Sonder) Baillon and *S. lukwangulensis* (Tennant) Bernardi, a case could be made for treating them as a single "collective species." The centers of the two taxa are distant from one another by about 50 km.

Schefflera cracens grows as a sparse-looking tree or shrub in low tepui woodland or forest on ridges or "shoulders" or upper slopes. Associated genera include *Clusia*, *Oedematopus*, and *Magnolia*.

Paratype. VENEZUELA. **Bolívar:** Caraurín-tepui, ladera SW, ± 1,950 m, 1 Feb. 1987, *Huber & Picón 11982* (K, MYF not seen).

Schefflera crassilimba Frodin, nom. et stat. nov. Replaced name: *Schefflera guanayensis* subsp. *sipapoensis* Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 67. 1984. TYPE: Venezuela. Amazonas: Cerro Sipapo (Paráque), Phelps Camp to North Savanna, 1,400 m, 17 Dec. 1948, *Maguire & Politi 27756* (holotype, NY; isotypes, K, MO).

Tree to 15 m tall with a trunk to 12 cm DBH, but usually smaller; twigs ca. 1 cm thick. Leaves digitately compound, 7–10-foliolate, the leaflets flat; petioles 13–25 cm long; petiolules of unequal length,

Figures 9, 10. —9 (Left). *Schefflera cracens* Frodin. *Maguire 33323* (isotype, VEN). Habit with detail of fruit. —10 (Right). *Schefflera clavigera* Frodin. Habit with detail of fruit.

0.5–5.5 cm. Blades on a single plane, oblong-oblanceolate, 9–16.5 cm long, 3–7 cm wide, flat, quite coriaceous, drying ± light olive-brown, the surfaces not notably contrasting; apex usually broadly obtuse or rounded, the tip generally quite short to almost obsolete, base cuneate to obtuse, not or very slightly decurrent into the petiolule, margin not or but slightly recurved, unbroken; midrib somewhat raised below; lateral veins about 10–12 on each side, obscure to just visible above, very slightly raised below,

spreading-ascending and generally straight, extending to margin and intersecting with the marginal vein, not contrasting with mesophyll below when dry; secondary veins ± developed; fine reticulation just visible when dry; marginal vein rather fine, obscured by the margin. Inflorescences terminal, twice compound, paniculate, the flowers in shortly pedicellate umbellules; main axis 5 cm long, proliferating over its entire length; primary branches 10–12, 30–34 cm long, somewhat stout, ± ascending in all directions; peduncles quite slender, numerous, racemosely arranged along most of branch length, 10–30 mm long, with very small persistent bracts at base. Flowers small; pedicels to 2 mm long; ovary after anthesis 2 mm long, bearing a slender stylar column to 2 mm long. Maturing fruit distinctly elongate, sometimes developing slightly obliquely, the body to 6 × 2.5 mm, the calyx rim conspicuous, 1 mm wide, erect; stylar column to 2 mm long, bifid at apex, the tips spreading; pedicels to 4 mm long.

Previously described as a subspecies of *Schefflera guanayensis*, this plant is sufficiently distinct from others treated under that species to merit specific rank. The leaflet color (when dry) and texture, leaf bases, and the small tip and the less conspicuous lateral and marginal veins distinguish it from what are now *S. guanayensis* and *S. paruana*. It can be differentiated from *S. guanayensis* by the prevailing leaflet shape; from *S. paruana* it differs in the leaflet texture, color, smaller size, and unbroken margins, the last feature also serving to separate it from *S. pedicelligera*. The elongate fruits are also distinctive.

Schefflera crassilimba is limited to the upper parts of Cerro Sipapo, where it appears to inhabit lower slopes and valleys, sometimes occurring along streams. Its closest relative seems to be *S. guanayensis*, which occurs approximately 130 km to the northeast. Cerro Sipapo, the most westerly of the high Guayana tepuis, is also home to three other distinctive endemics: *S. sipapoensis* Maguire, Steyermark & Frodin, *S. pauciradiata* Maguire, Steyermark & Frodin, and *S. myrioneura* Frodin (the latter described below).

Additional specimens examined. VENEZUELA. **Amazonas:** Cerro Cuao, Caño Cabeza de Manteco, 73 km SE de Puerto Ayacucho, 1,580 m, 5°06′N, 67°28′W, Sep. 1989, *A. Fernández et al. 6262* (MO, PORT not seen); Caño Piedra, 115 km al SE de Puerto Ayacucho, 1,500 m, 4°54′N, 66°54′W, Sep. 1989, *A. Fernández et al. 6022* (MO, PORT not seen); Cerro Sipapo (Paráque), occasional in East Basin, 5,000–5,500 ft., 20 Jan. 1949, *Maguire & Politi 28470* (NY, VEN not seen); Cerro Sipapo, S branch, Caño Profundo, via Caño Negro, 1,400 m, 8 Jan. 1949, *Maguire & Politi 28251* (K, NY).

Schefflera disparifolia Frodin, sp. nov. TYPE: Venezuela. Bolívar: Mukuripá-tepui (5°15′N, 60°53′30″W), 1,300 m, 6 Sep. 1986, *L. Hernández 434* (holotype, K). Figure 11.

Arbor *Schefflerae umbellatae* laxe affinis, ab ea inflorescentiae ramis primariis tenuoiribus, ramis secundariis paucioribus (ad 13–14), 5–7 cm longis; paginis inferis foliolorum fulvo-sericeis. Folia composita simplicesque coaetanea ferit.

Tree 12 m tall; twigs 9 mm diam. Leaves 6-foliolate, but sometimes unifoliolate just below the inflorescence; petiole 15–19 cm long, 2.5 mm diam., the sheathing base as broad as the twig but not pulling away from it when dry and without a ligular lobe; petiolules (where present) slender, 0.8–2 cm long. Blade in simple leaves oblong-ovate, glabrous above, bright and finely sericeous-hairy below, 18 × 10.5 cm, coriaceous, brittle; apex not known, base broadly obtuse; venation spreading, somewhat raised beneath, the lateral veins numerous, ending in a semi-consolidated submarginal vein. Blades in compound leaves narrowly elliptic to slightly obovate, 9–12 cm long, 3.5–4.6 cm wide, thinly coriaceous; apex just obtuse, tip scarcely evident, base broadly acute, margins entire, incurved, their lower parts gradually curving; upper surface drying olive-green, the veins and reticulum very slightly recessed; undersurface finely veined, the veins and reticulum rather faint. Inflorescence initially terminal, umbellate, basically twice compound but some ultimate coflorescences once reiterated, the axes drying olive green, most bracts fugacious; main axis not developed; primary rays about 3, 17–17.5 cm long, 4 mm diam., thinly sericeous; secondary rays about 13 or 14, all at ends of primary rays, 5–7 cm long, ± pale-sericeous; ultimate coflorescences umbellate, with a central cluster of 15–17 flowers on pedicels 6–8 mm long and 1–3 lateral umbellules emerging beside or just below the cluster, the latter with brightly sericeous peduncles 13–16 mm long and 5–10 probably unisexual flowers on pedicels (perhaps not fully developed in the available material) ca. 2 mm long. Buds described as white but perhaps greenish with a bright sericeous indumentum; flowers later yellowish green. Immature fruit remaining wholly inferior, oblong, usually 3-angled when dry, 3–4 mm long; calyx rim 1 mm wide, with 5 small teeth; disk 2 mm across; stylar column about 1.5 mm long, becoming slightly trifid at apex with advancing development.

Schefflera disparifolia differs from *S. umbellata*, found at higher elevations in the nearby Roraima-Ilú-tepui complex, in the finer venation of the leaflets, the mostly fugacious bracts, the persistence of

Figures 11–14. —11 (Top left). *Schefflera disparifolia* Frodin. *L. Hernández 434* (holotype, K). —12 (Top right). *Schefflera dissidens* Frodin. *Liesner 23329* (holotype, K). —13 (Bottom left). *Schefflera eximia* Frodin. *Boom et al. 5969* (holotype, K). —14 (Bottom right). *Schefflera huberi* Frodin. *Huber 12701* (holotype, K).

indumentum on inflorescence axes (particularly the secondary rays) during fruit maturation, the generally shorter secondary rays, the longer pedicels, the more marked distinction of the fruit from the pedicel, and the styles evidently remaining mostly united during fruit maturation. The ovary evidently is always trilocular. Elsewhere in the Guayana, the leaflets recall *S. clavigera*, but in that species the primary rays of the umbel are stouter and the stylar column in fruit is longer. The umbels, as well as the leaflets and presence of a trilocular, somewhat oblong ovary, superficially resemble *S. huachamacarii* Maguire, Steyermark & Frodin, but in that species the leaflets are smaller and the primary rays always have a naked, or empty, node; nevertheless, it is possibly the most closely related species and occurs at middle to upper-middle altitudes.

More material is needed to determine whether the reversion of the leaves to a unifoliolate state just below the inflorescence is common or peculiar to the material cited here. Further collecting in the area is also desirable, both because this plant comes from an intermediate altitude—a level that I believe has been somewhat neglected, but which has yielded such interesting species as *S. clusietorum*, *S. nigrescens*, *S. neblinae* and *S. varisiana*, and in the "Didymopanax" group, *S. yutajensis*—and because there may be a local radiation of the *S. umbellata* line, especially on what seem to be lower-altitude summit areas. A related, possibly distinct plant from a nearby tepui, at an elevation similar to that of Mukuripá-tepui, is represented by another collection from Lionel Hernández: Matawaí-tepuy, oeste tepuy [Kukenán-tepui] (5°12′N, 60°53′W), 1,500 m, 6 Sep. 1986, *L. Hernández 430* (MO); due to incomplete material, however, it is not being described at this time.

Schefflera dissidens Frodin, sp. nov. TYPE: Guyana. Mazaruni–Potaro: Mt. Roraima, summit area just E of Venezuelan border, La Proa Camp near Lake Gladys, 2,800 m, 14 Apr. 1988, *Liesner 23329* (holotype, K; isotype, MO). Figure 12.

Arbor parva paludicola *Scheffleram acaropunctatam* referens, sed ab ea inflorescentiae ramis secundariis longitudine duas exhibentibus atque nodum et absque nodo intermedium, carentibus recedit. Umbellae secundariae conjunctim clavis non similes, *S. umbellatae* conversae.

Tree 2 m tall; twigs rapidly thickening below current shoot, > 1.5 cm diam., the current shoot(s) to about 0.8 cm. Leaves 4–6-foliolate, the base extending across the twig, sheathing, blunt above with no significant free portion; petiolules 1–2.8 cm long. Blades elliptic, glabrous, green and somewhat shiny above, darkly glaucous and minutely pubescent to glabrescent below (brightly sericeous-pubescent in young growth), 6.3–10 cm long, 3–6(–6.7) cm wide, stiff, coriaceous; apex rounded, the tip absent or retuse, base obtuse to rounded, ± decurrent into the petiolule, margins entire, slightly incurved when dry, curving ± uniformly; surfaces relatively smooth, the veins and reticulum above very slightly recessed when dry, ± slightly but distinctly raised below; midrib beneath prominent, ± glaucous; primary veins 11 or 12, slender, spreading-ascending, gently rising, sometimes divaricating, abruptly curving and anastomosing just inside margin to form an inframarginal vein; secondary veins variously developed, some extending almost to margin; reticulation fairly fine, lacking in organized crossveins. Inflorescence initially terminal, later pseudolateral, umbellate, basically twice compound (but some coflorescences with lateral single reiterations), the axes largely glabrescent, drying relatively dark; main axis absent; primary rays 1 (or perhaps 2), stout-looking, 24 cm long, 5.5 mm diam.; secondary rays all terminal, 1.5–6 cm long, essentially of two lengths; ultimate coflorescences umbellate, comprising, if fully manifest, a central cluster of 6–10 or more bisexual, fertile flowers subtended by one or more umbellules of probably unisexual (male) flowers (evidently mostly absent or undeveloped or abortive in the material studied), the peduncle 0.8 cm long, sericeous-pubescent; ovary usually 3- or 4-locular. Maturing fruit gray-green, 3- or 4-angled, globose, about 5 × 5 mm; calyx rim about 1 mm wide, wall-like, the teeth relatively obscure; disk < 2 mm across, recessed; stylar column ca. 3 mm long, 3- or 4-fid at apex, the arms radiating at right angles, about 0.5 mm long.

Schefflera dissidens is superficially similar to the apparently sympatric *S. umbellata*, but differs from it in the leaves having less strongly marked venation and margins not evidently incurved or revolute, inflorescences with 1(2) branch(es) and secondary rays of widely varying lengths with the longest exceeding those in *S. umbellata*, and fruits 3- or 4-angled. In *S. umbellata* the secondary rays are mostly of similar length. The morphology of the leaflets also resembles *S. acaropunctata*, but in that species the leaflets are generally smaller and the inflorescence branches rather shorter; it usually also has one empty node.

Schefflera dissidens is known only from the type collection and occurs on the summit of Mt. Roraima in open rocky areas with ravines and a small lake.

Schefflera duidae Steyermark, Fieldiana, Bot. 28: 444. 1952.

Contrary to Maguire et al. (1984), I believe that *Schefflera quinquestylorum* should retain specific rank. The arguments are presented under that species. *Schefflera duidae* subsp. *duidae* then becomes a plant with an extensive range in the western Guayana, extending also to Serra Aracá in northern Brazil (Prance et al., 1992). *Schefflera duidae* is a shrub or small tree, 5–6 m tall, or a liana. It is found along streams or on forested sandstone ledges or declivities, at 1,250–1,800 m in Estado Bolívar (Sierra Pacaraima, Cerro Sarisariñama) and Estado Amazonas (Cerro Cuao, Cerro Duida, Cerro Huachamacari, Cerro Neblina, Sierra Parima) in Venezuela, and northwestern Amazonian Brazil (Cerro Neblina, Serra Pirapucú, Serra Surucucus).

Schefflera eximia Frodin, sp. nov. TYPE: Brazil. Amazonas: Serra da Neblina [S rim], Camp 12 [in the headwaters of the Rio Ariobó drainage, 2 km SW of Pico da Neblina], 1,950 m, 26–27 Feb. 1985, *Boom, Buck & Brewer-Carías 5969* (holotype, K; isotype, NY). Figure 13.

Arbor parva montium nebulosorum *Schefflerae coriaceae* affinis, at ab ea per folia minor elliptica etiam inflorescentias semel compositas statim diagnoscenda. Pericarpium fructus in statu sicco ut videtur non sulcatum sed tantum rugosum.

Tree 4 m tall, 12 cm diam.; twigs glabrous, ca. 8 mm across below apex, thickening gradually. Leaves 5- or 6-foliolate; petioles 16.5–22 cm long, base sheathing, not or only slightly pulling away from stem on drying, the free portion scarcely developed; petiolules 1–5 cm long. Blades narrowly oblong-elliptic, glabrous above, rather finely puberulent below, 11–15 cm long, 5–6.2 cm wide, coriaceous; apex tapering, shortly rounded, the tip retuse, base obtuse to rounded, margin flat or slightly incurved; upper surface fairly glossy, drying olive green, the veins and reticulum slightly recessed; undersurface initially rusty hairy, later turning patchily gray, somewhat veiny, the midrib strongly expressed; primary lateral veins 10–13 on each side, somewhat differentiated from the secondary veins, ascending, sometimes divaricating, gradually curving and merging into a consolidated marginal vein; secondary veins partially to almost completely developed; reticulum faintly expressed, in dry state more readily discernable above. Inflorescence terminal, umbellate, once compound, bracts fugacious; primary rays about 7, unbroken, glabrous, 15–17 cm long, 2.5 mm diam., drying dark; coflorescences simply umbellate, 20–25-flowered, the pedicels 18–21 mm long, ± finely rusty sericeous; flowers not known. Fruit remaining inferior, globose, green before maturity, to 7 × 7 mm, 5-angled when dry; calyx rim narrow, with 5 shallow teeth; disk about 3 mm across; stylar column 3 mm long, only the stigmata slightly discrete.

Schefflera eximia is without apparent immediate relatives; outstanding features include the once compound umbellate inflorescence, comparable to those in the Plerandra group in the western Pacific, and, among species of the Guayana Highland, the relatively large, five-pyrenate fruits. The fine, rusty indumentum on younger leaflets is also distinctive. Somewhat coarse leaflet venation and five-pyrened fruits are also seen in *S. coriacea* and *S. japurensis;* in the former, the primary rays of the inflorescence each have a subsidiary verticil of secondary rays, while in the latter the styles are free. *Schefflera gracillima* Steyermark & Maguire has 4- or 5-locular fruits, but in that species the leaves are smaller and the inflorescence much more delicate.

The type collection contains another, possibly extraneous element: a twice umbellate inflorescence of about 6 primary rays 17–18 cm long, each with a naked intermediate node and about 25 terminal secondary rays or peduncles 3.7–4.5 cm long; on each of the latter are 10–12 fruits similar to but smaller than those described in the protologue, with the end of the stylar column a little more divided. No leaves are attached. The spread and proportions of the secondary rays and the naked nodes recall *S. huachamacarii* Maguire, Steyermark & Frodin, but in that species the fruits are 3-pyrened and the leaf has 3–5 leaflets.

Schefflera eximia is known only from the type collection and is described as occurring in *Bonnetia*-dominated scrub forest. This is part of the tepui vegetation formation (Huber & Alarcón, 1988). Camp 12 was situated by a waterlogged savanna, but the environs, close to Pico da Neblina, also included a thick, stunted, heavily mossed cloud forest (Brewer-Carías, 1988: 150).

Schefflera guanayensis Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 66. 1984. TYPE: Venezuela. Amazonas: Cerro Guanay [summit area], 1,800 m, 2 Feb. 1951, *Maguire et al. 31740* (holotype, NY).

The original description of *S. guanayensis* contained elements of what are now *S. clausa*, *S. crassilimba*, and *S. paruana*. The brief description of the nominate subspecies is likewise drawn from discordant elements; the cited paratype, *Steyermark et al. 108965*, is *S. clausa*. A revised description,

which incorporates one collection made since 1984, is accordingly presented below.

Treelet or small tree 2–5 m, glabrous except for thinly appressed hairs on inflorescence axes and peduncles; twigs relatively thick and pithy, 1.1 cm diam. below the apex. Leaves 10–12-foliolate; petioles 13–27 cm, drying dark brown, the base extending into a stipular ligule for ca. 1 cm long and widening below; petiolules unequal, 1.2–5 cm. Blades in a single plane, flattened, green above, pale green below, oblong to oblong-ovate to elliptic-ovate, the widest point at or somewhat above middle, 6–12 cm long, 3–6.7 cm wide, coriaceous; surfaces somewhat glossy above, dull below, somewhat contrasting when dry but not markedly so; apex obtuse, tip acuminate or (in leaves from younger trees) shortly caudate, base broadly obtuse to subrotund, margins flat, unbroken; midrib somewhat prominent beneath; primary lateral veins ca. 10–14, not sharply contrasting with mesophyll when dry except for being paler on the upper surface, spreading-ascending, extending to and intersecting with margin, hardly curving but partially breaking up distally into percurrent tertiary cross-veins; secondary lateral veins divergent at a higher angle, partially developed, weakening into the reticulation. Inflorescences terminal, twice compound, paniculate, drying dark, the flowers in umbellules; primary branches up to 6, 20–27.5 cm long, 3 mm diam. near base, ascending to almost erect, thinly to sparsely appressed-hairy, basal bracts lanceolate, ca. 1.1 cm long; peduncles 28–50, scattered, slender, 0.9–3 cm long, their subtending bracts 2.5–3 mm long; umbellules ca. 10-flowered or so, pedicels about 2 mm long, the basal bracteoles 1 each, reduced or early caducous. Stamens 5. Immature ovary 2.5–3 mm long; disk gently sloping, then sharply curving into a stylar column 2 mm long, bifid at the apex, the stigmata ± spreading; calyx almost entirely adnate, the rim nearly flush with disk, with 5 small acute lobes. Fruit not seen, but probably remaining entirely inferior.

Among related species, *Schefflera guanayensis* sensu stricto has no readily discernable features, except perhaps the comparatively small, fairly closely veined leaflets with unbroken margins and the slightly tapering partial panicles. Only *S. crassilimba* and *S. clausa* share this combination of relatively small leaflets and flowers in umbellules. *Schefflera crassilimba*, previously described as *S. guanayensis* subsp. *sipapoensis* Maguire, Steyermark & Frodin, may be distinguished by somewhat thicker, relatively narrower leaflets with ± narrowed bases, less contrast between the leaflet surfaces when dry, and somewhat longer inflorescence branches. *Schefflera clausa* has a more slender appearance, foliage drying pale with distinctive purplish margins, and usually conduplicately folded leaflets. In addition, *S. crassilimba* is usually on lower slopes and in valleys, whereas *S. guanayensis* is found in more exposed situations, comparable to those of *S. clausa*.

Small leaflets are also found in *S. argophylla*, *S. contracta*, and *S. meiurophylla*, but all these have their flowers in heads. The somewhat larger-foliaged but also umbelluliferous *S. maguireorum* (*S. reticulata* subsp. *yutajensis*) has leaflets with coarser-looking venation and flowers almost in heads, the pedicels being only ca. 0.75 mm long. *Schefflera paruana*, formerly associated with *S. guanayensis*, has indented margins like those in *S. pedicelligera* Maguire, Steyermark & Frodin, and as presently known cannot be confused with the Cerro Guanay plants.

The relatively thick twigs of this species resemble two other umbelluliferous species, both of the Neblina massif: *S. asymmetrica* and *S. concolor*. These, however, have larger, differently veined leaflets and longer inflorescence branches and pedicels; moreover, the peduncles are not as widely ranging in length, thus causing the partial panicles to be less tapering. Also, the twigs of *S. concolor* are as much as 2.5 cm across when dry.

Schefflera guanayensis inhabits scrub and dwarf forests in the summit area and on ridges. This is comparable to the situation of *S. clausa*. The only other known ridge and summit dwellers are the very distinct *S. tremuloidea* and *S. marahuacensis*.

Additional specimen examined. VENEZUELA. **Amazonas:** Serranía Guanay, sector NE, toward Río Parguaza, ± 1,700 m, 20–28 Oct. 1985, *Huber 11059* (MO, MYF not seen, NY).

Schefflera huberi Frodin, sp. nov. TYPE: Venezuela. Amazonas: Sierra de Maigualida, sector nor-occidental, cabeceras del Río Iguana, afluente del Río Asita, 1,720 m, 25 Mar. 1988, *Huber 12701* (holotype, K; isotype, MYF not seen). Figure 14.

Arbor parva *Schefflerae ulocephalae* affinis, sed ab ea foliolorum venis lateralibus modice ascendentibus et ovariis brevissime pedicellatis differt. Folia interdum 4-foliolata foliolis pagina infera minus tomentosa.

Tree 5–7 m, with broad, dense crown; twigs pithy, 1.4 cm across, the surfaces, including the leaf bases, brown pubescent. Leaves 3- or 4-foliolate; petiole 13.5–16 cm long, the base broad, sheathing, with a free portion to 3 mm long; petiolules 0.9–2.4 cm long. Blades oblong-elliptic, dark green and glabrous above, dark grayish maroon and tomentulose be-

neath, 9.2–15.4 cm long, 3.8–8.1 cm wide, coriaceous; apex rounded, tip absent, base broadly acute to rounded, margins entire, distinctly incurved; upper surface somewhat glossy, moderately rugose, the venation recessed; undersurface strongly veined, the midrib prominent, decreasing distally; primary lateral veins 11–15, spreading-ascending, gently curving upward before passing into a semi-consolidated marginal vein formed from the anastomoses; secondary veins almost as strongly developed; crossveins few to several on each side but variously oriented and passing only between primary and secondary veins. Inflorescences initially terminal, later pseudolateral, umbellate, three times compound, at least the secondary bracts persistent; main axis not developed; primary rays ca. 26.5 cm long, 4 mm diam., glabrescent, drying dark, their number unknown but presumably not more than 5 or 6; secondary rays 2.3–3.5 cm long, dark-tomentulose, radiating hemispherically at ends of primary rays and outwards in a subsidiary pseudowhorl of 6 at ca. 6 cm below, subtended by bracts 4–5 mm long; ultimate coflorescences tertiary, with a cluster of central bisexual, fertile flowers on pedicels 2 mm long at ends of secondary rays and (0)1 or 2 lateral, tertiary, ca. 7-flowered umbellules arising immediately below, the peduncles and pedicels of the latter respectively 8–12 mm and 2–3 mm long, tomentulose, the pedicels each subtended by a minute bracteole; calyx rim 1 mm wide, 5-toothed; ovary obconic, 1 mm long, the disk flat, the stylar column 2.5–3 mm long, the tip bifid or trifid. Immature fruit 4–5 mm long, bright green, 4 mm across, compressed or 3-angled when dry, hardly heterochronous.

Among related species, *S. huberi* has the strongest-looking venation and the least consolidated marginal veins. It shares primarily trifoliolate leaves with *S. baculosa* and *S. ulocephala*, but differs from the latter in the flowers being pedicellate and the leaflets having thinner pubescence and more ascending venation; in addition, the stylar column is distinctly longer. From the former it differs in the leaflet margins being incurved when dry, the undersurface more finely tomentulose with coarser, more strongly expressed and ascending venation, more slender primary inflorescence rays, and pedicellate flowers.

Schefflera huberi is known only from the type collection and is reported as being of sparse occurrence in scrub vegetation of upper headwaters, at least some of it reported as secondary. Associated species may include *S. longistyla*, of similar habit and aspect, and the more readily distinguishable *S. umbraculifera*.

Paratypes. VENEZUELA. **Amazonas:** Sierra Maigualida, NW sector, small valley along upper tributary of Caño Iguana, 2,000 m, 28 Feb.–3 Mar. 1991, *Berry et al. 4833* (MO).

Schefflera japurensis (Martius & Zuccarini ex E. Marchal) Harms, in Engler & Prantl, Nat. Pflanzenfam., III 8: 38. 1894; Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 71. 1984. TYPE: Colombia. Caquetá: Araracoara, Japura River, *Martius s.n.* (holotype, M).

This is one of the two most widely distributed species in the "Crepinella" group, though seemingly relatively scattered in occurrence. Knowledge of its range remains imperfect. Since 1984 it has been collected in two parts of Peru: Dept. San Martín, Rioja Province, logging road to N of Carretera Marginal (km 431), 56 km W of Rioja, 2 km E of Naranjos, 980 m, 1 June 1986, *Knapp et al. 7445* (MO); Dept. Huánuco, Pachitea Province, W part of Sira Mountains, above "Campamento Pato Rojo," 1,200 m, 22 Dec. 1987, *Wallnöfer 17-221287* (K, WU not seen), and 1,300 m, 23 Dec. 1987, *Wallnöfer 12-231287* (K, WU not seen). These are ca. 700–1,000 km southwest and south of the southern edge of the Guayana Shield, where the otherwise most westerly record occurs (Araracuara on Río Caquetá, southeastern Colombia). The several southeastern Colombian records are in turn distinctly separated geographically from those in or near the Neblina massif, cited below. In addition, *Cardona 1765* (US; see below) extends the range into the Gran Sabana uplands.

Changes to the list of exsiccatae presented in Maguire et al. (1984) are also necessary, due to redeterminations. *Steyermark 90225* belongs here, not under *S. coriacea; Cardona 1765* likewise belongs here and not under *S. umbellata;* and *Maguire et al. 36904* is a distinct species, *S. clusietorum.* In Brazil, *Fróes 12638* likewise is distinct; it will be described elsewhere.

Known Venezuelan records now include: **Bolívar:** Río Caroní, Gran Salto de Eutobarima [as "Eutonarima"], orillas, 720 m, 8 Oct. 1946, *Cardona 1765* (US, VEN not seen); base central del Guaiquinima-tepui, 85 km S of La Paragua, 500 m, 11 May 1987, *Aymard 5821* (MO, PORT not seen); Cerro Guaiquinima, Río Paragua, Camp 3, 1,200 m, 19 Dec. 1951, *Maguire et al. 32745* (K, NY); Guaiquinima, cumbre, Río Szczerbauari (Carapo), 1–2 km from falls, 750 m, 20 Jan. 1977, *Steyermark et al. 113241* (NY, US, VEN not seen); Guaiquinima, cumbre, Río Szczerbanari (Carapo),

1–2 km from falls, 750 m, 22 Jan. 1977, *Steyermark et al. 113476* (NY, VEN not seen); Sierra Ichún, N de Salto María Espuma (Salto Ichún), 625–725 m, 27 Dec. 1961, *Steyermark 90225* (NY, US, VEN not seen). **Amazonas:** Flanco N del Duida, bosque del Río Negro, afluente del Cunucunuma, 210 m, 3°43′N, 65°35′W, Apr. 1990, *A. Fernández 7613* (MO, PORT not seen); flanco N del Duida, 2 km al S de la población Culebra, 700 m, Apr. 1990, *A. Fernández 7773* (MO, PORT not seen); slope of Cerro Huachamacari, 850 m, 6 Mar. 1985, *Liesner 18339* (MO, NY); vic. y al norte del Cerro Vinilla, ca. 30 km SSW de Ocamo, 440–600 m, 1 Mar. 1984, *Steyermark et al. 130362* (MO, VEN not seen); [Neblina massif], 15 km NNE of Pico Phelps, Camp IV [in Cañon Grande], 780 m, 15–18 Mar. 1984, *Liesner 16708* (MO). For convenience, the following Brazilian record is also included: BRAZIL. **Amazonas:** Rio Maturacá, between Missão [de Maturacá] and Serra Pirapucú [SW of Serra da Neblina], 400–800 m, 13 Jan. 1966, *Silva & Brazão 60814* (K, NY).

The considerable contrast in the leaflet surfaces of *S. japurensis* is further enhanced by retention of the sericeous indumentum on the undersurface; this is reflected in descriptions of it as "rusty" by more than one collector.

Schefflera jauaensis (Maguire, Steyermark & Frodin) Frodin, comb. et stat. nov. Basionym: *Schefflera reticulata* subsp. *jauaensis* Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 59. 1984. TYPE: Venezuela. Bolívar: Cerro Jaua, cumbre de la porción central-occidental, 1,922–2,100 m, 22–27 Mar. 1967, *Steyermark 98078* (holotype, NY; isotypes, K (imperfect), VEN not seen).

An amended description is presented because of the exclusion of the original paratype of this taxon as well as the change of rank.

Tree 3 m tall. Leaves 5-foliolate; petiole 40 cm long, 6 mm diam. near base, the base extending into a glabrous stipular ligule 2.4 cm long, its apex acute and body only gradually broadening below the middle; petiolules 2–7.5 cm long, relatively stout in the manner of the petioles. Blades oblong, coriaceous, glabrous, 16.5–20.5 cm long, 8–9 cm wide, showing some evidence of conduplicate folding when fresh, the undersurface reported as silvery green; apex broadly rounded with a short, incongruously small acumen to 0.7 cm long, base shallowly cordate, margin wavy, tucked in at endings of primary veins; midrib fairly prominent; lateral veins about 16 on each side, conspicuous above and below, spreading, not strongly raised when dry but on both surfaces distinct, oriented straight toward margin and ending only at the marginal vein; secondary venation hardly developed and finer reticulation obscure. Inflorescence presumably twice compound, paniculate, slightly whitish appressed-hairy all over, the length of the main axis and number of primary branches not known; primary branches about 60–61 cm long, subtended by a basal bract to 2.5 cm long and bearing numerous capitula; peduncles spreading, 2.2–2.9 cm long with persistent subtending bracts 4–8 mm long; capitula 1.1–1.4 cm diam., about 20-flowered. Ovary 2-locular; stylar column thickened, less than 1 mm long. Maturing fruit about 4 mm long, entirely inferior, distinctly fleshy, somewhat compressed.

Schefflera jauaensis most nearly resembles *S. sessiliflora*, but differs from that species in having longer peduncles and more congested heads with more flowers; the stylar column is also shorter. From *S. contracta* and its relatives it differs in larger leaflets, inflorescences, and heads, although the morphology of the leaflets is most like *S. contracta*.

As originally described, *S. jauaensis* encompassed its type collection and *Steyermark et al. 124075* from Cerro Marutani close to the Brazilian border. The latter, however, is *S. sessiliflora*, a species not reported from the Meseta de Jaua.

Schefflera jauaensis is known only from the type collection and is described as inhabiting dense dwarf recumbent plateau forest bordering streams, of mixed woody growth with *Bonnetia* and *Clusia*. No habitat or association data are available for *S. contracta*, but the related *S. meiurophylla* does occur in comparable situations on Serranía Uasadi.

Schefflera longistyla Frodin, sp. nov. TYPE: Venezuela. Amazonas: Sierra de Maigualida, sector NW, cabeceras del Río Iguana, afluente del Río Asita, 1,720 m, 25 Mar. 1988, *Huber 12692* (holotype, K; isotype, MYF not seen). Figure 15.

Arbor parva *Schefflerae ulocephalae* cognata, sed haec species nova foliis quinquefoliolatis, foliolis latitudine 6 cm non excedentibus etiam inflorescentiis radiorum secundariorum verticillos subsidarios carentibus notata. Ovaria brevissime stipitata atque columna stylaris 3 mm longa.

Tree 4–5 m, with broad, dense crown; twigs pithy, 1 cm across, the surfaces, including the leaf bases, pale brown pubescent. Leaves usually 5-foliolate (3-foliolate in young plants); petiole 10–15.5 cm long, the base broad, sheathing; petiolules 1–2.9 cm long. Blades narrowly elliptic to oblong-elliptic, green and

Figures 15–18. —15 (Top left). *Schefflera longistyla* Frodin. *Huber 12692* (holotype, K). —16 (Top right). *Schefflera meiurophylla* Frodin. *Huber 12875* (holotype, K). —17 (Bottom left). *Schefflera suaveolens* Frodin. *Huber 12837* (paratype, K). —18 (Bottom right). *Schefflera umbraculifera* Frodin. *Huber 12682* (holotype, K).

glabrous above, maroon to grayish maroon and ferrugineous-tomentulose beneath, 6.6–14.6 cm long, 3.2–5.7 cm wide, coriaceous; apex rounded, tip absent or slightly retuse, base broadly acute to obtuse, margins entire, distinctly incurved; upper surface glossy, rugose, the venation and reticulum recessed; undersurface somewhat strongly veined, the midrib prominent, decreasing distally; primary lateral veins 12–15, somewhat spreading-ascending, curving slightly upward before passing into a consolidated marginal vein formed from the anastomoses; secondary veins extending to or nearly to

the margin; cross-veins not regularly developed. Inflorescences initially terminal, later pseudolateral, umbellate, three times compound, at least the secondary bracts persistent; main axis not developed; primary rays ca. 32 cm long, 5 mm diam. in lower part, decreasing to 4.5 mm, initially (along with all other reproductive parts) pale pubescent, later glabrescent, drying dark, their number unknown; secondary rays about 15, 3.2–4 cm long, pale-tomentulose, radiating mostly hemispherically at ends of primary rays (with an occasional ray further down), subtended by bracts 4–5 mm long; ultimate cofloresences tertiary, with an almost headlike cluster of central bisexual, fertile flowers on pedicels 1.5 mm long at ends of secondary rays and about 3 lateral, tertiary, ca. 5- or 6-flowered headlike umbellules arising immediately below, the peduncles and pedicels of the latter respectively 10–13 mm and 1 mm long, pale-tomentulose, the pedicels each subtended by a minute bracteole; calyx rim 1 mm wide, 5-toothed; corolla green; stamens whitish. Immature fruit 4–5 mm long, bright green, 4 mm across, compressed or 3-angled when dry, hardly heterochronous; stylar column 3 mm long, barely bifid or trifid at the apex.

Distinguishing features of *Schefflera longistyla* among related species are the narrowly elliptic to oblong-elliptic, somewhat rugose leaflets, the location of the secondary inflorescence rays usually all at or near the ends of the primary rays, the barely pedicellate flowers (and fruits), reiteration of inflorescences to no more than three times, and, in the fruits, the almost entirely united stylar column. The presence of pedicels separates it from *S. baculosa*, *S. brachypoda*, and *S. ulocephala;* the more evidently united styles, absence of a distinct subsidiary whorl of secondary rays and narrower leaflets separates it from *S. huberi;* and differently colored indumentum and lesser inflorescence reiteration (as well as the lack of a subsidiary verticil of secondary rays) distinguishes it from *S. pallens* (with which the type collection was originally identified).

Schefflera longistyla is one of a partly geographically concentrated series of species, apparently the result of localized diversification on Sierra de Maigualida and Serranía Uasadi. Elsewhere, members include *S. ulocephala* (Cerro Duida, Cerro da la Neblina) and *S. pallens* (Cerro de la Neblina).

Paratypes. VENEZUELA. **Amazonas:** Sierra de Maigualida, sector nor-occidental [locality as for *12692*], 1,720 m, 25 Mar. 1988, *Huber 12696* (K, MYF not seen); Sierra Maigualida, NW sector, small valley along upper tributary of Caño Iguana, 2,000 m, 5°30′N, 65°15′W, 28 Feb.–3 Mar. 1991, *Berry et al. 4834* (MO).

Schefflera maguireorum Frodin, nom. et stat. nov. Replaced name: *Schefflera reticulata* subsp. *yutajensis* Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 59. 1984, not Steyermark & B. Holst, 1988. TYPE: Venezuela. Amazonas: Cerro Yutajé, summit, NW Ridge, Río Manapiare, 1,400 m, 11 Feb. 1953, *Maguire & Maguire 35154* (holotype, NY; isotype, K).

An amended description is presented because of the transfer in this paper of one of the two original paratypes of this taxon to *S. asymmetrica* and the change of rank.

Tree 4 m tall; twigs initially 12–13 mm diam., increasing to 15 mm. Leaves 7- or 8-foliolate, the leaflets in a single plane; petioles 30–33 cm long, remaining sparsely gray-woolly through anthesis, later glabrescent, the axis emerging about halfway up the base, the free portion of the stipular ligule about 1.2 cm long; petiolules 2–4 cm long, initially thinly pubescent. Blades elliptic to narrowly elliptic, coriaceous, tending to be conduplicately folded, 12.5–15 cm long, 4.8–5.9 cm wide, glabrous with some scattered hairs near midrib on undersurface; apex obtuse, the tip shortly acuminate (not caudate), base ± smoothly rounded, margin slightly wavy; upper surface ± glossy; undersurface dull, slightly paler than the upper; midrib fairly prominent beneath; primary lateral veins 9–12 on each side, only slightly raised below, spreading and curving upward slightly, extending to and uniting with the marginal vein; secondary lateral veins scarcely developed, with reticulation usually including 2 or 3 irregular cross-veins on each side toward the margins. Inflorescences terminal, twice compound, paniculate, with (6)7 or 8 radiating primary branches; main axis short; branches 25–33 cm long, finely but ± densely buff-pubescent at anthesis, subtended by basal bracts 2 cm long; headlike flower clusters numerous, crowded along most of the length of the branches, irregularly spaced, with some naked secondary bracts below them; peduncles 1–2.5 cm long, buff-pubescent, their subtending bracts 5–7 mm long. Flowers yellowish; pedicels about 0.75 mm long, densely buff-pubescent as the ovaries, each subtended by one bracteole; calyx rim very narrow, with 5 minute teeth; petals 5, coherent in a calyptra, the calyptra opening basally as the stamens expand with the segments separating upward; stamens ca. 3 mm long; anthers reddish; ovary about 1.25 mm long, the disk flat, the stylar column 2 mm long, its lower ⅓ pale and upper ⅔ dark when dry. Fruit as yet unknown.

Schefflera maguireorum was originally described as a subspecies of *S. reticulata* (Gleason) Maguire, Steyermark & Frodin, but here the flowers are less clearly in heads; rather they are in congested clusters. The species thus links capituliferous (such as *S. jauaensis* and *S. sessiliflora*) and umbelluliferous (such as *S. concolor* and *S. paruana*) members of what appears otherwise to be a rather natural alliance—the "Cheilodromi"—all but confined to Guayana, characterized most notably by marginally veined leaflets, paniculate inflorescences with elongate primary branches, and 2(3)-pyrened, wholly inferior fruits. The weakness as a character of the distinction between heads and umbellules has been discussed elsewhere (Frodin, 1975).

Floral distinctions aside, the leaflets in *S. maguireorum* and *S. paruana* are superficially similar. However, those in the latter are somewhat larger and more thinly coriaceous, and the subsidiary lateral veins are somewhat more consistently developed, with no evident cross-veins; in the former there are usually two or three such veins, any subsidiary venation usually being undeveloped or with occasional elongate secondary veins. In addition, in *S. paruana* the basal veins are more discrete, the undersurface somewhat glossier, and the midrib there less prominent.

From *Schefflera asymmetrica*, the first collection of which was originally included here, *S. maguireorum* can be distinguished by its smaller, more oblong leaflets with lesser development of secondary lateral venation, and flowers in almost headlike clusters with very short pedicels. Similarly, *S. concolor* has larger leaflets and flowers in distinct umbellules.

Schefflera maguireorum is known only from the type collection and has been described as occurring in scrub on ridge summits. Its reported altitude is below that of the summit area and falls within the known local range of *S. suaveolens* (1,375–1,760 m) as well as the ranges, on other mountains, of more closely related species such as *S. nigrescens*, *S. paruana*, and *S. pedicelligera*.

Schefflera marahuacensis (Maguire, Steyermark & Frodin) Frodin, comb. et stat. nov. Basionym: *Schefflera tremuloidea* var. *marahuacensis* Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 63. 1984. TYPE: Venezuela. Amazonas: Cerro Marahuaca, cumbre, sección NW, 2,500 m, 16 Feb. 1981, *Steyermark, Brewer-Carías & Liesner 124406* (holotype, NY; isotypes, MO, US, VEN not seen).

Trees 3–4 m tall; twigs pithy, 11–14 mm diam. Leaves 6-foliolate, tightly clustered toward twig ends; petioles glabrous, 16.5–19 cm long, emerging halfway up their associated stipular ligules; ligules 2–2.5 cm long, 2 cm broad at base, with pale, scarious margins 1 mm wide; petiolules 4–6 cm long. Blades glabrous, ovate-elliptic, 5.8–11.2 cm long, 3.4–7.8 cm wide, coriaceous; apex acute, passing into an acumen 8–10 mm long (on new shoots the acumen to 25 mm), base obtuse to rounded, margin entire; both surfaces ± glossy, the upper more strongly shining; midrib on undersurface prominent, raised; primary vasculature comprising a pair of prominent, spreading basal veins and 9 or 10 additional veins on each side, the latter somewhat irregularly spaced, spreading-ascending, extending to margin, somewhat prominent on undersurface but hardly raised; secondary veins partly developed; reticulation coarse. Inflorescence terminal, twice compound, paniculate; main axis absent; primary branches few, 25–46.5 cm long, drying dark purple or blackish, subtended at base by bracts 2 cm long; flowers in numerous racemosely arranged, fairly congested umbellules arising along upper ⅔ of primary branches, their peduncles 10–21 mm long and subtended by persistent secondary bracts ca. 2 mm long; pedicels 1.5(–2) mm long, each subtended by 1 minute bracteole; calyx rim scarious, with 5 small teeth; ovary obconic, about 1 mm long.

The large stipular ligules ("auricles" in the protologue), broader leaf bases, and larger leaflets were the character states originally used to distinguish these plants at varietal rank. Reexamination of the type, along with a subsequent collection, suggests that the twigs are also larger and thicker than in any of the material of *S. tremuloidea* Maguire, Steyermark & Frodin var. *tremuloidea*, the leaflets are thicker and more oblong, the umbellules are more uniformly and extensively distributed along the inflorescence branches, and the peduncles are shorter. Indeed, these plants are perhaps less closely allied to variety *tremuloidea* than that taxon is to *S. pedicelligera*, originally ranked as a species. Variety *marahuacensis* seems, therefore, worthy of specific rank.

I am not able at present to postulate any close allies for *S. marahuacensis*. Apart from *S. tremuloidea*, it is altitudinally the highest known member of its series. All collections to date come from Cerro Marahuaca, where it occurs in forests along creeks on the tepui summit at 2,500–2,600 m elevation.

Additional specimen examined. VENEZUELA. **Amazonas:** Cerro Marahuaca, cumbre, parte central de la meseta sud-oriental, Quebrada Yekuana, 2,560 m, 10–12 Oct. 1983, *Steyermark 129431* (MO, NY, VEN not seen).

Schefflera meiurophylla Frodin, sp. nov. TYPE: Venezuela. Amazonas: Serranía Uasadi, sector NW, cumbres montañosas ubicadas en las cabeceras orientales del Río Asita, afluente derecho del Río Ventuari, ± 1,850 m, 22 Nov. 1988, *Huber 12875* (holotype, K; isotype, MYF not seen). Figure 16.

Arbor *Schefflerae contractae* valde affinis, sed ab ea foliis fere truncato-obovatis nec conduplicatis paginis superna infernaque minus discrepantibus recedit; vere inter duas omnino in effectu exiguior.

Tree 4–6 m tall, sparsely foliaged and somewhat flat-topped, with a slight smell when cut. Leaves gathered toward twig ends, 5- or 6-foliolate; petiole glabrous, somewhat darkened when dry, 6.5–14 cm long, less than 3 mm thick, the base extending into a stipular ligule > 3 mm long, acute; petiolules 1–4.1 cm long, ca. 1.5 mm thick. Blades almost truncate-obovate, widest well above the middle, stiff when dry, green above, pale green below, 5.7–11.8 × 3–6.7 cm, not conduplicately folded; apex rounded-truncate, occasionally slightly emarginte, the tip cuspidate-acuminate, 5–6 mm long, base broadly cuneate, and margins somewhat incurved; upper surface when dry ± shining, not much darker than lower surface, the veins conspicuous; lower surface with midrib only somewhat prominent, the veins ± distinct from the mesophyll; primary lateral veins closely spaced, 12 or 13 on a side, ascending, extending straight to margin and little forking; secondary veins fairly well developed, breaking into irregular fine reticulation but without evident cross-veins. Inflorescences terminal, semi-erect, twice compound, paniculate, the axes rather dark maroon; length of main axis or number of branches not known; primary branches (from different inflorescences) 14.5–39.5 cm long, 2–4 mm diam., patchily or thinly pale hairy; bearing racemosely arranged capitula in the upper ¾ and subtended by a basal bract to 2 cm long; peduncles pale hairy, 6–12 mm long, ca. 1 mm diam., subtended by persistent bracts 2–3 mm long; capitula ca. 5 mm across after anthesis, later up to 10 mm, ca. 15-flowered; calyx rim narrow, 5-toothed; ovary 2-locular, the disk flat or slightly sloping, small, passing into a short but distinct stylar column 0.5 mm long with free parts to another 0.25 mm long. Fruit obovoid-ellipsoid, to 5 mm long and 4 mm across, wholly inferior, initially green, later red; stylar column persistent.

Schefflera meiurophylla is most closely related to *S. contracta* and also shows affinities with *S. argophylla*. It differs from *S. contracta* in the petioles longer in relation to the blade length and thus less congested; the petiolules as well as the petioles less stout and not obviously purplish; the blades not conduplicate and distinctly obovate with the widest point well above the middle; the surfaces of the blades with less contrast; and the midrib on the undersurface less prominent.

Schefflera meiurophylla is known only from the type collection and occurs in low, mixed montane forests, at least sometimes along creeks. On the Sierra de Maigualida it seems to occur in moister habitats than *S. argophylla*.

Schefflera monosperma Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 51. 1984. Replaced name: *Crepinella gracilis* E. Marchal ex Im Thurn, Timehri 5: 195. 1886; Trans. Linn. Soc. ser. 2, Bot. 2: 275. 1887, not *Schefflera gracilis* (Miquel) Viguier 1909. TYPE: Venezuela [as "Guyana"]. Mt. Roraima, upper slope, above 5,000 ft., 10 Dec. 1884, *Im Thurn 162* (lectotype, K; isotype, BM).

When Maguire et al. (1984) proposed the new name *Schefflera monosperma* for this species, the reference for the replaced name was incomplete and is given in full here. With the segregation of *Schefflera cracens*, discussed more fully under that species, *S. monosperma* becomes limited to the Roraima-tepui and its outliers. Further collections have become available or have been rediscovered in the last decade and are cited below. *Maguire & Maguire 40837*, doubtfully identified in Maguire et al. (1984), is confirmed as *S. monosperma*. Observation of fruiting material supports the contention of Baumann-Bodenheim (1955) that the ovary is pseudomonomerous.

Additional specimens examined. GUYANA. Mt. Roraima, 6,900 ft., 26 Mar. 1978, *A. Hedley & P. J. Edwards KER.081* (K); Mt. Roraima, escarpment, 7,600 ft., 1 Nov. 1973, *Persaud 144* (BRG not seen, K). VENEZUELA. **Bolivar:** Uei-tepui (Serra do Sol), on Brazil/Venezuela frontier, 6,500 ft., 28 Dec. 1954, *Maguire & Maguire 40837* (K, MG not seen, NY, VEN not seen). BRAZIL. Mt. Roraima, Abhang, 2,200 m, Jan. 1910, *Ule 8706* (K, L).

Schefflera morototoni (Aublet) Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 51. 1984. TYPE: illustration of *Panax undulata* [sic] Aublet, Hist. Pl. Guian. 2: pl. 360. 1775; supporting herbarium collection yet to be selected, but at BM there is an Aublet specimen seen by both Seemann (1868) and the author.

Panax splendens Kunth in HBK, Nov. Gen. Sp. 5: 11 (ed. fol. 9). 1821. *Schefflera splendens* (Kunth)

Frodin ex Lindeman in A. Pulle et al., Fl. of Suriname 3(2): 352. 1986. *Didymopanax splendens* (Kunth) J. Decaisne & Planchon ex Seemann, J. Bot. 6: 132. 1868. TYPE: Colombia. Cauca: Popayán, *Humboldt & Bonpland s.n.* (lectotype, selected by Seemann, 1868, P not seen).

Panax splendens Kunth was first reduced to the slightly earlier name *Aralia micans* Humboldt & Bonpland ex Schultes by Krug & Urban (1899). They retained that taxon, however, as a distinct species under the name *Didymopanax micans* (Humboldt & Bonpland) Krug & Urban. It is perhaps not yet fully recognized that both of these names, which may be homotypic (Jan Lindeman, pers. comm.), represent the juvenile form of *S. morototoni.* The capitula included with the type of *Aralia micans* (B-WILLD) are extraneous.

Prance et al. 4700 should be omitted from the list of exsiccatae given under this species in Maguire et al. (1984: 51–52); it is a distinct species, which will be described elsewhere.

The following records from the Venezuelan Guayana are assigned here to *Schefflera morototoni:* **Amazonas:** Alto Orinoco, Isla del Esfuerzo, ca. 200 m, 5 Sep. 1951, *Croizat 562* (F); bosque ribereño del Río Asisa, 100 m, 4°30′N, 65°48′W, Oct. 1989, *L. Delgado 887;* Río Puruname, 40 km above mouth, ca. 100 m, 29 May–5 June 1982, *Huber & Tillett 06390* (K, MYF not seen); Río Orinoco, Caño Tama-Tama, 150 m, 12 Sep. 1954, *J. S. Level 142* (MO, NY); Cerro Sipapo, Caño Grande, slopes above lower escarpment, 4,500 ft., 21 Jan. 1949, *Maguire & Politi 28528* (MO, NY, VEN not seen); Sierra Parima, near Simarawochi, 795–830 m, 18 Apr.–25 May 1973, *Steyermark 107383* (NY, VEN not seen); Frente No. 1, Piedra Sapo, Río Atacavi, 140 m, Nov. 1989, *J. Velazco 0997* (MO, PORT not seen). **Bolívar:** Campamento "El Paraíso," 48 km NE del caserío Los Rosos, 17 km de Upata, altitude not given, Apr.–June 1965, *Blanco 039* (US, VEN not seen); Cerro Curichapo, 25 km al NE de la Paragua, 450 m, Mar. 1987, *Fernández 4083* (MO, PORT not seen); bosque en lomerío 4–5 km al N del Cerro Camarón, Macizo Guaiquinima, 240 m, Oct. 1988, *Fernández & Aymard 4813* (MO, PORT not seen); alrededores de San Ignacio, 240 m, 27 Apr. 1987, *L. Hernández 486* (MO); SW slope of Amuray-tepui, E of Auyán-tepui, W of Aparamán-tepui, 600–700 m, 28 Apr. 1986, *Holst & Liesner 2742* (MO); 20–35 km SW of Manteco, road to San Pedro de las Dos Bocas, ± 200 m, 1–3 Aug. 1978, *Liesner & González 5862* (MO, VEN not seen); Chinese Slide, Cerro Bolívar, 300–400 m, 24 Oct. 1953, *Maguire et al. 35966* (NY, VEN not seen); Mina "Los Pijiguaos," Bajo Río Suapure, altiplanicie de la Mina, ± 600 m, Apr.–May 1987, *Ramírez & Paredes 77* (MO, MYF & TFAV not seen); Imataca, altitude not given, July 1983, *Stergios et al. 6032* (MO, PORT & UEC not seen); Gran Sabana, between Kun and Uaduara-parú [S of Mt. Roraima], 1,065–1,220 m, 1 Oct. 1944, *Steyermark 59085* (F); between Santa Teresita de Kavanayén and Río Pacairao (tributary of Río Mouak), 1,065–1,220 m, 20 Nov. 1944, *Steyermark 60436* (F, NY); Cerro La Reforma, above junction of Río Reforma with Río Toro, 200–250 m, 15 Dec. 1960, *Steyermark 88099* (F, GH, NY, US); Río Paramichi entre la boca del Río Paramichi y el Salto de Chalimano, 525–625 m, 8 Jan. 1962, *Steyermark 90762* (NY, US, VEN not seen); bosque a 2 km al NE de Santa María de Erebato, 370 m, Feb. 1989, *M. Sucre 2562* (MO, PORT not seen); Medio Caura, Salto de Pará, 280 m, 9 Mar. 1939, *Ll. Williams 11455* (F, US, VEN not seen); at E base of Cerro Coroba, Hato la Vergareña, 400 m, 19 Oct. 1954, *Wurdack & Guppy 124* (F, NY, US); Cerro Marimarota, 100–250 ft., 26 Jan. 1956, *Wurdack & Monachino 41384* (MO, NY, VEN not seen). **Delta Amacuro:** 5–14 km ESE of Los Castillos de Guayana, 50–200 m, 28 Mar.–2 Apr. 1979, *Davidse & González 16279* (MO, VEN not seen); mountain area ca. 13 km by road ESE of town of Sierra Imataca, 400 m, 4–6 Apr. 1979, *Davidse & González 16582* (MO, VEN not seen); vicinity of Caño Jotajana, tributary of Caño Guiniquina, NW of Epaña, 50 m, 20 Oct. 1977, *Steyermark et al. 115094* (MO, VEN not seen).

Schefflera morototoni var. **angustipetala** (E. Marchal) Frodin, comb. nov. Basionym: *Didymopanax morototoni β angustipetalum* [sic] E. Marchal in Martius, Fl. Bras. 11(1): 241. 1878. TYPE: Venezuela. Amazonas: Pacimoni River, banks, low altitude, [11–12] Feb. 1854, *Spruce 3456* (K, NY; lectotype not selected at this time).

This taxon has evidently not been recorded before for Venezuela. Marchal, in his protologue, mistakenly attributed the type locality to Brazil; but the Río Pacimoni, a tributary of Brazo Casiquiare, lies wholly within Venezuela (Huber & Wurdack, 1984).

Marchal distingushed this variety by its petals being three times as long as broad and by the peduncles of the umbellules being reflexed. To this may be added that the leaves are only 5-foliolate, the primary veins of the leaflets curve continuously, the inflorescence appears only to be twice compound, with primary branches to 38 cm long, and

the peduncles are 3–4 cm long, with the longer ones toward the ends of the branches. However, with the imperfect collections available (neither of them fruiting) I hesitate to recognize it at any higher rank.

The reflexed peduncles resemble another species, as yet undescribed, which occurs outside the Venezuelan Guayana in a broken arc from eastern Colombia to northeastern Peru. Representative collections include *Schultes & Cabrera 16010* (GH, US) and *Croat 18642* (MO, NA). The foliage may be compared with *S. tamatamaensis* Maguire, Steyermark & Frodin, but without knowledge of the fruits in the present taxon no further comparisons are attempted.

Additional specimen examined. Venezuela. **Amazonas:** Caño Tama-Tama, 2 km al E de Tama-Tama, 140 m, 3°07′N, 65°50′W, 3 Mar. 1990, *Aymard & Delgado 8430* (MO, PORT not seen).

Schefflera myrioneura Frodin, sp. nov. TYPE: Venezuela. Amazonas: Cerro Sipapo, Phelps Camp to North Savanna, 1,400 m, 17 Dec. 1948, *Maguire & Politi 27738* (holotype, K; isotypes, MO, NY, US).

Arbor mediocris ad 15 m alta, *Schefflerae psilophyllae* ut videtur affinis sed ab ea foliolorum venis numerosissimis (primariis cum secundariis 35–60) atque arte patentibus et fructu in statu sicco non sulcato differt. Bene notabilis.

Tree 12–15 m tall, the trunk 12–15 cm diam. Leaves (4–)6–8-foliolate; petiole ca. 24 cm long, 4 mm diam.; petiolules 2.4–7 cm. Blades usually oblong-obovate but sometimes obovate, glabrous, 9.5–25.5 cm long, 6.7–8.6 cm wide, chartaceous when dry; apex broadly rotund or truncate, ± distinctly emarginate, base acute to more usually broadly obtuse, the edges sometimes recurving into the petiolule, margins entire, in the dry state slightly incurved; surfaces when dry about the same color or the upper slightly lighter; midrib moderately prominent beneath, longitudinally collapsing on drying; lateral venation very fine, the primary and secondary veins together 35–60 on each side, spreading, extending to a continuous marginal vein, the veins sometimes narrowly once divaricating toward the margin; tertiary lateral venation ± elongate, emerging from the midrib or primary or secondary lateral veins. Inflorescence initially terminal but later pseudolateral, umbellate, compound, the primary and secondary branches stiff, straight, and stout; main axis hardly developed; primary rays 3 or 4, glabrous, 11.5–27 cm long, 4–5 mm diam., with or without a subsidiary whorl of secondary rays (when present, the upper internode > 4.5–6 cm long); secondary rays flattened, 2.5–6.5 cm long, up to 10 at ends of primary branches and 2–4 in subsidiary whorls, those at the ends oriented in all directions; ultimate coflorescences umbellate, with 3–5 central, bisexual flowers on pedicels 5–7 mm long and lateral tertiary reiterations with flattened peduncles (tertiary rays) 1–2.7 cm long and congested clusters of flowers on pedicels 2–3 mm long; flowers small, 4 × 2 mm in bud, the calyx rim poorly developed with minute teeth, the corolla calyptrate, pale when dry; ovary drying dark, 3- or 4-locular, the stylar column ca. 1 mm long. Fruit 9–10 mm long, 7–8 mm across, the widest point above the middle during maturation, remaining inferior, the disk depressed, ca. 2 mm across, the stylar column 1.5 mm long without free portions.

Schefflera myrioneura differs from *S. psilophylla*, where it was previously included by Maguire et al. (1984), in having fewer primary rays in the inflorescence as well as emarginate leaf apices. It also differs from *S. suaveolens* in the presence of fewer terminal secondary rays, larger fruits, and united styles. From both these species it differs in its very fine lateral venation, although in this respect it is closer to *S. suaveolens*. The inflorescence has an angular appearance, which among presumably related species in the Guayana can best be compared with *S. pallens* rather than either *S. psilophylla* or *S. suaveolens*.

This new species is an occasional to frequent tree of wet mixed montane forests, some at least of a mossy aspect. Like many other araliads in forest zones, it may be an opportunist, taking advantage of gaps created by rockfalls, windthrows, or fires, or dwelling on forest or scrub edges. The structure of the vegetative parts suggests that a considerable amount of water may be lost upon drying. By contrast, the fruits when dry do not shrink around the pyrenes as is common in most species of *Schefflera;* in this they may be compared with *S. gabriellae* Baillon of New Caledonia.

Schefflera myrioneura is one of the distinctive endemics of Cerro Sipapo, along with *S. crassilimba*, *S. pauciradiata* Maguire, Steyermark & Frodin, and *S. sipapoensis* Maguire, Steyermark & Frodin. This westernmost of the Venezuelan Guayana tepuis, however, is "merely the highest point in a vast area of gently rising contour" (Paynter, 1982: 189). Shortly to the east are two patches depicted on the vegetation map of Huber & Alarcón (1988) as having "vegetación tepuyana"; these areas are apparently unexplored botanically. This suggests a possible larger "support area" for four such distinctive endemics—two of them initially described in 1984—rather than merely the 55 km² summit area (95

km² if the talus slopes are included) of Cerro Sipapo alone.

Paratypes. VENEZUELA. **Amazonas:** Cerro Sipapo, Savanna Camp to North Escarpment, 1,400 m, 23 Dec. 1948, *Maguire & Politi 27880* (K, NY); Cerro Sipapo, above Caño Grande, 1 km NW of Savanna Camp, 1,500 m, 28 Dec. 1948, *Maguire & Politi 28015* (K, NY); Cerro Sipapo, above lower escarpment, above Caño Grande, 4,500 ft., 21 Jan. 1949, *Maguire & Politi 28539* (K, NY).

Schefflera neblinae (Maguire, Steyermark & Frodin) Frodin, comb. et stat. nov. Basionym: *Schefflera coriacea* subsp. *neblinae* Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 79. 1984. TYPE: Brazil. Amazonas: slope of Serra Pirapucú [NE of] Rio Maturacá, [SW of] Serra da Neblina, 1,300 m, 26 Jan. 1966, *Silva & Brazão 60903* (holotype, NY; isotype, K).

Tree 3 m high, 10 cm diam. Leaves 5- or 6-foliolate; petioles 10–13.5 cm long, the sheathing base small; petiolules 1.3–2.1 cm. Blades oblong-elliptic to oblong-obovate, usually broadest above middle, the surfaces contrasting, 9–13.1 cm long, 4–5 cm wide, coriaceous; apex broadly obtuse, usually ending in a broad point, base obtuse, rounded at insertion and not decurrent, margin only narrowing about ½–⅔-way down from apex, incurved but not noticeably inrolled; upper surface glabrous, the venation hardly impressed, undersurface grayish hairy, the indumentum tightly appressed; midrib prominent below; primary lateral veins about 12–14 on a side, ± closely parallel, just showing as thin lines on undersurface, near margin suddenly anastomosing and each joining with the primary vein below; secondary venation not well developed, usually breaking and toward margin joining with primary vein below. Inflorescence terminal, compound-umbellate; primary rays ca. 3–5, 28–30 cm long, drying very dark; secondary rays both at apex and in a single subsidiary whorl, some 20–23 at the former, far fewer at the latter; all axes dark sericeous-pubescent, the hairs much appressed, but later glabrescent; umbellules 13–15-flowered, the pedicels fairly slender, 7–9 mm long, sericeous-hairy; buds 3 mm long; petals 5, in bud sericeous without, at anthesis spreading outwards before falling; ovary 3-locular, the stylar column united, 0.5 mm long.

This species is known only from the type collection. For *Prance, Steward, Ramos & Farias 9796* from the Serra Parima, formerly included with the subspecies (Maguire et al., 1984: 79), see *Schefflera varisiana;* the remaining records included by Maguire et al. (1984: 79–80) are *S. acaropunctata.*

The generally smaller foliage and inflorescences, the absence of a distinctively reddish indumentum, and a shorter stylar column along with the trilocular ovary all indicate that specific rank is merited for this taxon. The only known locality of *S. neblinae* is relatively remote from the reported range of *S. coriacea*, although *S. varisiana*, clearly a sister species of *S. neblinae*, occurs closer. *Schefflera neblinae* is also allied to *S. pauciradiata* Maguire, Steyermark & Frodin.

Schefflera nigrescens Frodin, sp. nov. TYPE: Venezuela. Amazonas: 1 km N of Camp XI, 6.5 mi. NNE of Pico Phelps [Cerro Neblina], 1,300 m, 28 Feb. 1985, *Nee 31186* (holotype, NY; isotypes, MO, US).

Species habitu formaque *Scheffleras varisianam* et *neblinam* in memoriam redigit, sed haec species nova foliolis anguste obovatis, ad basin cuneatis vel attenuatis, in pagina super minus rugulosis, ad apicem late obtusatis vel rotundatis notata. Foliola valde in colore discrepantes, inter paginas supernam infernamque.

Tree 8 m tall, trunk to 20 cm diam. Twigs fairly slender, 6 mm across in upper portion when dry. Leaves 5- or 6-foliolate; petioles 15–16 cm long, 2 mm diam.; basal sheath not extending into a stipular ligule; petiolules 1–2.5 cm long. Blades in a single plane, narrowly obovate, 9.2–13 cm long, 3.3–4.4 cm wide, thinly coriaceous; surfaces contrasting, the upper quite glossy, drying quite dark, glabrous with distinctly sunken primary and secondary lateral veins, the under finely golden tan hairy, with only the midrib prominent; apex rounded or broadly obtuse, passing into a short acumen 2–3 mm long, base cuneate or attenuate, not constricted at insertion with the petiole, margins when dry curving slightly upward; lateral veins many, spreading-ascending, less hairy below and so contrasting with the pubescent mesophyll, visibly camptodromous, arching near but not evidently reaching the margin, the intramarginal loops obscure. Inflorescence compound-umbellate, probably terminal and without a main axis; primary rays 2(3?), about 25 cm long, bearing at some 8–10 cm below the end a subsidiary whorl of 2–5 secondary rays 2.6–4 cm long, the remaining secondary rays all at the end; terminal sprays comprising 19–21 secondary rays (or peduncles) 2.3–3.4 cm long, these somewhat golden sericeous at anthesis and ending in 10–15-flowered umbellules; pedicels 7–9 mm long. Flowers small; buds 3.5 mm long, petals 5, ca. 1 mm or so long, ± sericeous outside, their base hidden by the calyx rim, opening

from the top and spreading before falling; disk slightly sloping from a sunken base, to 2 mm across; free portion of calyx rim obscure; ovary usually 3-locular, ± straight, 1–1.5 mm long, then suddenly widening below calyx rim; stylar column short. Fruit not known.

Related species include *Schefflera varisiana* and *S. neblinae*, both of which have compound-umbellate inflorescences with a single subsidiary whorl of secondary rays and ± sericeous indumentum. *Schefflera nigrescens* differs from these in the more distinctly obovate leaflets, the greater contrast of their surfaces, and finer venation. *Schefflera neblinae* has more oblong-obovate to oblong-elliptic leaflets with bases rounded at the insertion of the petiole; it is presently known only from Serra Pirapucú, an isolated range near the southwestern corner of the Neblina massif but mostly cut off from it by the Rio Ariabá.

Schefflera nigrescens is known only from the type collection and is found in cloud forest on ridges and slopes north of the southern rim of the Neblina massif, falling toward Cañon Grande and the Río Baría. Nearby Camp XI was in the upper reaches of the most northern tributary of the Cañon Menor (maps in Brewer-Carías, 1988: 11, 39).

Schefflera pallens Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 72. 1984. TYPE: Brazil. Amazonas: trail to Pico Phelps, Serra da Neblina, 2,425 m, 3 Dec. 1965, *Maguire et al. 60503* (holotype, NY; isotype, NY).

Nee reported that this tree did not occur much below the site of Camp VII (1,730–1,850 m; Brewer-Carías, 1988: 149). This suggests that it is probably confined to the higher parts of the Neblina massif, perhaps in relatively open places above the main montane forest zone. More collections are needed, however, to ascertain the relative distribution, frequency, and abundance of this and two other species apparently characteristic of the tepui vegetation zone on Neblina, *S. eximia* (described above) and *S. simplex* Steyermark & B. Holst.

Additional specimen examined. VENEZUELA. **Amazonas:** [Cerro de la Neblina] Camp VII, 4 km NE of Pico Phelps, 1,950 m, 4 Feb. 1985, *Nee 30749* (MO, NY, US).

Schefflera paruana Frodin, nom. nov. Basionym: *Schefflera guanayensis* subsp. *paruensis* Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 67. 1984. TYPE: Venezuela. Amazonas: Cerro Parú, Río Parú, Caño Asisa, 1,800 m, 12 Feb. 1951, *Cowan & Wurdack 31405* (holotype, NY; isotype, K).

The epithet "*paruensis*" is not taken up here for the species because of the previously existing name *Schefflera paraënsis* Huber, which might cause confusion.

An emended description is furnished below, given the change in status proposed and the exclusion of two of the paratypes (now referred to *S. clausa*) from the account in Maguire et al. (1984).

Slender, probably sparingly branched tree 3–8 m tall; twigs to 1.5 cm diam. Leaves 4–11-foliolate; petioles to 37 cm long and decreasing from 5 to 2.5 mm diam., emerging from the sheathing base at 2 mm above its insertion with the node, the free portion of the base, or ligule, to more than 2.5 cm long; petiolules 3.5–8.5 cm long, fairly slender. Blades oblong-elliptic to oblong-obovate, glabrous, 7–18 cm long, 5.4–7.4 cm wide, thinly coriaceous; apex obtuse, the tip acuminate, to 1 cm long, base rounded, margins flat, vertically a little wavy, slightly tucked in at vein endings and thickened by a marginal vein; upper surface dull, undersurface somewhat glossy; venation of coarse appearance, primary lateral veins 8–10, spreading-ascending, joining with the marginal vein, secondary veins partly developed, organized cross-veins not evident. Inflorescence terminal, paniculate, twice compound; main axis short, thickened; primary branches 20–30, 47–68 cm long, ca. 5 mm diam., thinly grayish hairy; peduncles racemosely arranged, 65–85 in upper ¾ to ⅘ of the branch, 0.4–1.1 cm long, subtended by persistent small puberulent bracts, the umbellules 7–9-flowered; pedicels 1.5–3 mm long; flowers after anthesis 1–1.5 mm long, with flattened disk and stylar column about 1 mm long, the ovary 2-locular.

Schefflera paruana was originally distinguished from *S. guanayensis* at the subspecific level on account of its larger, oblong-elliptic leaflets, and greater number of peduncles on each primary branch. However, when viewed in a wider context and with the use of additional characters, each of the nonnominate subspecies described with *S. guanayensis* merits specific rank.

Schefflera paruana is most closely related to *S. marahuacensis* and *S. pedicelligera* Maguire, Steyermark & Frodin, both endemics of the central-southern tepui region, and *S. crassilimba* and *S. maguireorum* in the northwestern tepui region (Huber, 1988). It differs from *S. pedicelligera* mainly in its more densely crowded and numerous umbel-

lules with shorter peduncles and pedicels, obtuse to rounded leaflet bases, and petiolar insertion; from *S. marahuacensis* it differs by its longer, differently shaped, less strongly veined leaflets. The partial union of petiole and base above the insertion of the latter is a character state shared by this species with *S. marahuacensis*. A longer acumen, along with leaflet size and color (when dry), distinguishes *S. paruana* from *S. crassilimba*. From *S. maguireorum*, with somewhat similar leaflets, it differs in the umbellules not being headlike and with very short pedicels. *Schefflera paruana* is characterized by up to 20–30 primary branches in the inflorescence, a state apparently paralleled by *S. steyermarkii* but more than in the four aforementioned species.

Schefflera paruana is a tree of summit streams and the bases of tepui escarpments; it appears to be part of the tepui vegetation zone and in the upper part of the montane zone (Huber & Alarcón, 1988). Along with *S. asymmetrica* and *S. concolor* in the south and *S. ayangannensis* Maguire, Steyermark & Frodin in Guyana, it appears to be one of the more generalized species in its series.

Additional specimen examined. VENEZUELA. **Amazonas:** Cerro Parú, from camp caño to Point 2 (just N of Point 1), 2,000 m, 31 Jan. 1951, *Cowan & Wurdack 31072* (K, NY).

Schefflera psilophylla (Harms) Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 68. 1984. TYPE: Venezuela. Bolívar: Mt. Roraima, 1,900 m, *Ule 8702* (lectotype, here designated, G; isolectotypes, K, L).

The exclusion of most records included here by Maguire et al. (1984)—either to *S. myrioneura* or *S. suaveolens*—indicates that *S. psilophylla* is limited to mid-elevations on Roraima and Ilú-tepui. Three collections are known: *Ule 8702* (G, K, L); *Maguire et al. 33364* (K, NY), and *33484* (K, NY).

Schefflera quinquecarinata Steyermark, Bol. Soc. Venez. Ci. Nat. 25(106): 44, fig. 2. 1963. TYPE: Venezuela. Bolívar: vicinity of Km 134, bordering headwaters of Río Cuyuní, NE of Luepa, *Steyermark & Nilsson 483* (holotype, VEN).

Tillett et al. 45736 should be excluded from the list of records in Maguire et al. (1984: 5). It is a form of *S. morototoni*, but its status has yet to be resolved. In addition, *Prance et al. 10159* from Serra dos Surucucus in Roraima Territory, Brazil, distributed as this species but not listed in Maguire et al. (1984), appears to be *S. yutajensis* Steyermark & B. Holst, a vicariant species. *Schefflera quinquecarinata* thus remains limited to a relatively small area on the Venezuela–Guyana border.

Schefflera quinquestylorum Steyermark, Bol. Soc. Venez. Ci. Nat. 25: 46. fig. 3. 1963. *Schefflera duidae* subsp. *quinquestylorum* (Steyermark) Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 54. 1984. TYPE: Venezuela. Bolívar: Cerro Venamo, NW slopes, SE of road camp 125, to line of NE-facing sandstone bluffs, 1,100–1,140 m, 21 Apr. 1960, *Steyermark & Nilsson 429* (holotype, VEN not seen; isotypes, K, NY).

This taxon is not simply a vicariant of *S. duidae* but part of a small series of apparently sibling taxa, mainly in eastern Colombia and with links to *S. sprucei* (Seemann) Harms. Moreover, the leaflets are more acute, with a caudate-acuminate tip, and when dry exhibit greater surface contrast; the pubescence on the undersurface of the leaflets, when present, is also differently colored. There is also no evidence, as in *S. duidae*, that this is a facultative liana. I thus propose renewing its recognition as a species.

Geographically, the area of *S. quinquestylorum* is centered on Cerro Venamo and is limited by comparison with *S. duidae*, which is now known to range from Cerro Marutani to the central-southern tepuis (Huber, 1988) and south to Serra Aracá and Serra Pirapucú (the latter near the Neblina massif) in northern Brazil.

Schefflera sessiliflora Splithof-Heerschop ex Frodin, nom. nov. Replaced name: *Schefflera reticulata* (Gleason) Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 57. 1984, not Philipson, 1951. Basionym: *Didymopanax reticulatus* Gleason, Bull. Torrey Bot. Club 58: 434. 1931. TYPE: Venezuela. Amazonas: Cerro Duida, summit of Mt. Duida, Peak No. 7, 7,100 ft., Aug. 1928–Apr. 1929, *Tate 606* (holotype, NY; isotype, K).

Because the epithet *reticulata* was validly published in 1951 for a New Guinean species, a new name is needed. The new epithet relates to the position of the flowers and was introduced by Mrs. Splithof-Heerschop in her unpublished study of Araliaceae in the Guianas, carried out at Utrecht.

Additional material of *S. sessiliflora* has been collected in the last decade, and its variability can now be more effectively assessed. Two collections should, however, be excluded from the list of exsic-

catae presented under *S. reticulata* in Maguire et al. (1984): *Steyermark 98138* and *Steyermark et al. 109690*. Both of these are *S. steyermarkii*. To be added is *Steyermark et al. 124075* from Cerro Marutani, previously cited under *S. reticulata* subsp. *jauaensis*.

The resulting distribution pattern appears irregular, but may reflect reliction. Two populations are disjunct from the main center in the central-southern tepui region (Huber, 1988), which ranges from Cerro Parú to the Duida group. One of these is on or near Cerro Marutani in the Sierra Pakaraima, in the far south of the central-eastern region; and the other is at Auyán-tepui in the eastern region. The leaflets in the first are comparatively large, while the latter differs in fruit. The variability in the central area is phenotypic, most evidently in vegetative features.

Schefflera steyermarkii Frodin, sp. nov. TYPE: Venezuela. Bolívar: Cerro Jaua, cumbre, at base of second waterfall, 1,922–2,100 m, 22–27 Mar. 1967, *Steyermark 098138* (holotype, NY; isotypes, K, VEN not seen).

Arbores ad 10 m altae; haec species cum *Schefflera sessiliflora* hactenus confusa sed ab ea foliolis angustioribus apicibus acutis venis tenuibus et capitulis minoribus (ad 5 mm diametro) differt. Foliola pagina inferna argentea.

Tree 8–10 m tall, mostly glabrous; branchlets stout, 1.3 cm diam. Leaves around 10-foliolate; petiole ca. 26 cm long, arising from base 0.5–1 cm above its insertion, the free ligular portion ca. 1.5 cm long, with papery margins; petiolules around 2.4 cm long. Blades narrowly elliptic, glabrous, 7–13 cm long, 2–4.5 cm wide, thinly coriaceous; apex narrowly acute, passing ± insensibly into a caudate-acuminate tip to 1.2 cm long, lower part narrowing, base abruptly rounded but not recurving into petiolule, margins incorporating a marginal vein, vertically slightly wavy and sometimes slightly tucked in at vein endings; upper surface dull, undersurface minutely glandular-papillate, furnishing when dry a dull metallic reflection; midrib somewhat prominent below; lateral veins closely spaced, the primary veins 12–14 or more, spreading and extending to margin, the secondary veins closely resembling them but only reaching some ¾-way to margin, visible reticulation coarse. Inflorescence terminal, twice compound, paniculate; main axis 6.5–7.5 cm long, 0.8–1 cm diam., the zone of proliferation in the upper 3–4 cm; primary branches tightly clustered, 10 or more, rather straight and rigid, 35–43 cm long, 3.5 mm diam. near base, dull purple, subtended by bracts 3.5–4 cm long; capitula numerous, ca. 5 mm diam. after anthesis, 10–12-flowered, racemosely arranged, their peduncles 10–14 mm long, appressed silvery hairy, subtended by bracts 1.5–3 mm long (but where empty in lower part of branches to 6–7 mm long); buds dull purple with green; calyx silvery hairy below, the rim with 5 small teeth; petals and stamens 5; ovary 2(3)-locular, tawny yellow, disk ca. 1.3 mm across, stylar column ca. 1 mm long, tapering. Fruit not known.

The narrow leaflets of *Steyermark 98138* were noted by Maguire et al. (1984: 57) in introducing the records listed for *S. reticulata* (= *S. sessiliflora*). An earlier judgment by the author that a distinct species might be involved has, on the other hand, been given support by a second collection, *Steyermark 109690*. The two collections are thus here described as new. Other features that support the distinction of *S. steyermarkii* from *S. sessiliflora* include the finer leaflet venation and heads only about 5 mm diam. after anthesis. The relatively large number of primary branches in the inflorescence also appears to be distinctive; only *S. paruana* has more, and that species differs in leaflet form and morphology and in having flowers in umbellules.

Schefflera steyermarkii is limited to the Meseta de Jaua, which, with neighboring Cerro Sarisariñama and Cerro Guanacoco, is home to a number of other endemics in its series (*S. clausa*, *S. contracta*, and *S. jauaensis*) as well as, from among compound-umbellate species, the distinctive *S. gracillima* Steyermark & Maguire. All have been found in the summit zone. When compared with other tepui regions, however, endemism in the group seems low; other species are *S. coriacea*, here at its western limit, and *S. montana* (Gleason) Maguire, Steyermark & Frodin, otherwise occurring further west. *Schefflera sessiliflora*, too, is apparently absent, unless it has been overlooked.

Paratype. VENEZUELA. **Bolívar:** Cerro Jaua, cumbre, E tributary Río Marajano, 1,810–1,880 m, 28 Feb.–3 Mar. 1974, *Steyermark et al. 109690* (NY, US, VEN not seen).

Schefflera suaveolens Frodin, sp. nov. TYPE: Venezuela. Amazonas: Serranía Yutaje, Cerro Coro-Coro, Río Manapiare, 4,500 ft., 2 Mar. 1953, *Maguire & Maguire 35483* (holotype, NY). Figure 17.

Arbor sylvarum submontanarum usque ad 18 m alta, *Scheffleraе psilophyllae* cognata autem ab ea ovario plerumque 4–5-loculari, foliolis tenuiter coriaceis (vel etiam chartaceis), et inflorescentiae radiis primariis fere semper verticillos subsidiaros radiorum secundariorum infra apicem 4–20 cm ferentibus recedit.

Tree 7–18 m tall, when young with as few as 3 orthotropic branches, in maturity with a rounded crown; adult twigs to 1.4 cm diam. below growing point. Adult leaves (3–)5-or 6(–8)-foliolate; petiole 12–28(–38) cm long (in ultimate leaves of a shoot relatively short), generally shorter than inflorescence branches, to 5 mm diam.; petiolules 1–6 cm long, widely varying within a given leaf. Blades oblong-elliptic to oblong-obovate, the widest point at or above middle, glabrous, 8–22 cm long, 3.4–8.4 cm wide, chartaceous to thinly coriaceous (when young at least sometimes membraneous), drying greenish with only slightly contrasting surfaces; apex acute to obtuse or rounded, tip absent or retuse, base acute to narrowly obtuse, with a mid-range of ca. 90° and shortly decurrent into the petiolule; margins ± wavy, not or only slightly inrolled; venation thin but distinct, spreading, ± ascending; primary and secondary lateral veins virtually indistinguishable, up to 40 on a side; subsidiary lateral venation variously developed. Blades in leaves from young plants smaller, narrowly elliptic or ovate, 7.5–10 cm long, 2.4–2.8 cm wide, the apex acute, the tip acuminate. Inflorescences compound, umbellate, all parts glabrous, initially terminal, later pseudolateral as new shoots develop from beneath and grow alongside; primary rays 3 or 4(5), 23–67 cm long, 3–7 mm diam., always or nearly always with a subsidiary whorl (occasionally 2 whorls) of secondary rays, the internode between apex and the whorl below it 6.5–13 cm; secondary rays 3–6(–7) cm long, the subtending bracts 4 mm long but largely becoming lost during fruit maturation, 10–20(–30) in terminal umbel (or just below it), ca. 6 in subsidiary whorl(s), often gently curving; ultimate coflorescences umbellate, comprising a central cluster of 10–12 bisexual, fertile flowers and about 2 or 3 irregularly spaced lateral umbellules arising at 2–12 mm below; pedicels in central cluster 8–11 mm long (lengthening slightly in fruit), each subtended by a persistent acicular bracteole; lateral peduncles 9–16 mm long with up to 10 (probably functionally male) flowers on pedicels 5–7 mm long; flowers glabrous, green in bud; calyx rim 0.75 mm wide, projecting outward above the ovary, the 5 teeth quite small; corolla pale, the petals 5, opening and spreading before falling; filaments 2 mm long; ovary (3-or 4-) 5-locular, oblong, 1 mm long, 0.8–0.9 mm across; stylar column 1 mm long, undivided. Fruit remaining wholly inferior, initially green, maturing red-purple and ultimately purple-black, ovoid to globose, 4–5.5 mm long, 4–5 mm across (but up to 8 mm across when fresh); calyx rim slightly projecting, the disk ca. 1.75 mm across; stylar column ca. 2 mm long, divided at the tip, its base filling most of the disk; pyrenes usually 5, sometimes fewer.

The first collection of this species was initially and tentatively identified with *Didymopanax spruceanus* by Gleason (1931); later it and other collections were placed by Maguire et al. (1984) in *Schefflera psilophylla*. The abundant material now available shows *S. suaveolens* not to represent either of these species. It can be distinguished from *S. spruceana* by the (3-)4-or 5-celled ovary and from *S. psilophylla* sensu stricto by the presence in the inflorescences of fewer primary rays, each with 1(2) subsidiary whorls of secondary rays in addition to those at the apex. The venation in *S. psilophylla* is also somewhat coarser and the leaflet apices are usually ± acute; moreover, the ovary is only 3-locular. From *S. myrioneura*, described above, the present species differs primarily in its less closely spaced lateral venation and more graceful, less angular-appearing inflorescences; from *S. umbraculifera* it differs mainly in having thinner, wholly glabrous leaflets with ± flat margins and finer, less strongly contrasting lateral venation.

Schefflera suaveolens has a relatively wide distribution from Serranía Yutajé and Serannía Uasadi south to the Neblina massif and its outliers and east to Auaris in the Serra Parima, and also a wide altitudinal range; it is described as occurring in montane forest, mixed mossy-forest, scrub forest and *Bonnetia* forest (sometimes along watercourses), and is occasional to frequent. Ecologically, it probably favors nutrient-rich soils with a steady water supply, and it may be opportunistic. When cut, it may yield an aromatic, transparent and sticky resinous exudate.

Paratypes. VENEZUELA. **Amazonas:** Serranía Uasadi, sector nor-occidental, cumbres montañosas ubicadas en las cabeceras orientales del Río Asita, afluente derecho del Río Ventuari, ± 1,850 m, 22 Nov. 1988, *Huber 12837* (K, MYF not seen); 8 km NW of Yutajé settlement, W of Serranía de Yutajé, 1,500–1,760 m, 4 Mar. 1987, *Liesner & Holst 21637* (MO); Agüita, slopes of Cerro Duida, 3,100 ft., Dec. 1928, *Tate 876* (NY); Cerro Marahuaca, "Sima Camp," S-C portion of forested slopes, 1,140 m, 22 Feb. 1985, *Steyermark & Holst 130506* (MO, NY); Cerro Marahuaca, summit on undulating plateau, 2,520–2,650 m, 26 Feb. 1985, *Steyermark & Holst 130750* (MO, NY); [Cerro de la Neblina:] Río Yatua, below NW escarpment between Camp 4 and Cumbre Camp, 1,700–2,000 m, 13 Jan. 1954, *Maguire et al. 37274* (K, NY); Cañon Grande, NW head, 2,000 m, 8–9 Dec. 1957, *Maguire et al. 42326* (K, MO, NY, US); Cañon Grande, NW head, 2,000 m, 8–9 Dec. 1957, *Maguire et al. 42327* (MO, NY); E Escarpment, upper Cañon Grande, 1,900 m, 14 Dec. 1957, *Maguire et al. 42406* (K, MO, NY, US); Caño[n] Grande

SSE of Cumbre Camp, 1,100–1,150 m, 26 Dec. 1957, *Maguire et al. 42520* (K, MO, NY, US); Pico Phelps, S face, S of Camp V, 1,550–1,650 m, 12 Apr. 1984, *Gentry & Stein 46579* (MICH, MO); Camp VII, 1,850 m, 3 Dec. 1984, *W. Anderson 13475* (MICH); Camp VII, 5 km NE of Pico Phelps, 1,800 m, 2 Feb. 1985, *Nee 30706* (MO, NY); Camp XI, 6 km NNE of Pico Phelps, 1,550–1,650 m, 27 Feb. 1985, *Nee 31161* (MO, NY); 26 km ENE of Base Camp [on S rim], ridge on border divide, 2,000 m, 15 Apr. 1984, *Plowman & Thomas 13612* (F, K, NY). BRAZIL. **Roraima:** upper slopes of Serra Parima, S of Auaris [Uavaris Valley], 4°03′N, 64°22′W, 1,400–1,520 m, 10 Feb. 1969, *Prance et al. 9801* (CGE, INPA not seen, NY, S, US). **Amazonas:** between Missão Salesiana and Serra Pirapucú, Rio Maturacá [SW of Neblina massif], 800–1,000 m, 23 Jan. 1966, *Silva & Brazão 60866* (K, NY).

Schefflera ulocephala Frodin, nom. nov. Replaced name: *Schefflera globulifera* Maguire, Steyermark & Frodin, Mem. New York Bot. Gard. 38: 69. 1984, not Grushvitzky & N. T. Skvortsova, 1969. TYPE: Venezuela. Amazonas: Cerro de la Neblina [N rim], in Cumbre Camp, 1,700–2,000 m, 23 Jan. 1954, *Maguire, Wurdack & Bunting 37354* (holotype, NY; isotype, K).

Because the epithet *globulifera* was validly published in 1969 for a Southeast Asian species, a new name is needed. The new epithet is based on the Greek *oulos*, curly or woolly, and *kephalos*, head.

Schefflera ulocephala is part of a series of six species, which on Neblina includes *S. pallens;* the other members are on Sierra de Maigualida and Serranía Uasadi, where there has been some local diversification, as yet little studied or documented. The species include *S. brachypoda*, *S. huberi*, and *S. longistyla* on Maigualida and *S. baculosa* on Uasadi. Of these, the last named most resembles *S. ulocephala.*

Schefflera umbellata (N. E. Brown) Viguier, Ann. Sci. Nat., Bot., sér. 9, 9: 367. 1909. *Sciodaphyllum umbellatum* N. E. Brown, Trans. Linn. Soc. Bot. ser. 2, 6: 32. 1901. TYPE: Venezuela [as "Guyana"]. Mt. Roraima, summit, Oct. 1898, *McConnell & Quelch 666* (lectotype, K; isotype, BM).

Schefflera umbellata subsp. *duidana* of Maguire et al. (1984) has been accorded specific rank in this paper and renamed *Schefflera acaropunctata.* Records from the western Gran Sabana, including Auyán-tepui and the Chimantá massif, are also described as a distinct, vicariant species, *S. clavigera. Cardona 1765* is also transferred to *S. japurensis.* As a result, *Schefflera umbellata* is now limited to the cluster of tepuis in the southeastern Gran Sabana centering on Roraima-tepui. Some variability exists among presently available material, but no attempt is made here to analyze it in more detail.

Additional specimens examined (not included in Maguire et al., 1984). VENEZUELA. **Bolívar:** Matahui-tepui [Kukenán-tepui], 2,700–3,000 m, 22 Aug. 1982, *Castillo 2716* (K); Kukenán-tepui, cumbre meridional, 2,700 m, 15 June 1985, *Huber & Alarcón 10552* (CM, MYF not seen, NY); Kukenán-tepui, summit, 2,550 m, 11 Apr. 1988, *Liesner 23139* (MO), summit, 2,550 m, 12 Apr. 1988, *Liesner 23164* (MO); Yuruaní-tepui, 12 km NNE of Kukenán-tepui, 2,200 m, 29 Feb. 1984, *Huber 9092* (MO, MYF not seen, NY, US); Mt. Roraima, SW slopes, 7,400 ft., 11 Jan. 1939, *Pinkus 153* (GH, NA, US); Mt. Roraima, on slopes among rift, headwaters of Great Central Rift, 2,700–2,740 m, 28 Sep. 1944, *Steyermark 58884* (F); Mt. Roraima, cumbre, NE part, 2,750–2,800 m, 26 Aug.–2 Sep. 1976, *Steyermark et al. 112445* (MO, NY, U); Roraima Peak, "am Abhang," Dec. 1909, *Ule 8704* (G, K, L).

Schefflera umbraculifera Frodin, sp. nov. TYPE: Venezuela. Amazonas: Sierra de Maigualida, sector NW, cabeceras del Río Iguana, afluente del Río Asita, on a SE-facing slope, 1,720 m, 25 Mar. 1988, *Huber 12682* (holotype, K; isotype, MYF not seen). Figure 18.

Arbor sylvarum humilium exigua cujus foliola *Schefflerae suaveolentis* paginam supernam habent sed ab ea foliolis crassioribus ad marginem incurvatis ac ad paginam infernam molliter pubescentibus valde recedit. Foliola oblongo-obovata et late emarginata.

Tree 4–7 m, with broad, dense crown; twigs pithy, 1.4 cm across just below uppermost leaf and inflorescence. Leaves 5-foliolate; petiole ca. 21.5 cm long, the base as wide as the twig and forming flanges but not extending into a ligule; petiolules 2.3–3.8 cm long. Blades oblong-obovate, glabrous above, pale green and minutely brownish to grayish sericeous-tomentose below (except on the paler primary and, to a lesser extent, secondary veins), 11.3–14.2 cm long, 6–6.6 cm wide, coriaceous, little varying in size within a given leaf; apex emarginate, base broadly acute, slightly recurved into the petiolule, margin entire, noticeably incurved when dry; upper surface glossy, the venation slightly recessed; undersurface with prominent but rapidly fading midrib and slightly raised venation; primary lateral veins 9–12 on each side, spreading, sometimes divaricating in outer part of blade, curving sharply near margin and passing up just inside it to anastomose with the vein above; secondary veins ± distinctly developed; cross-veins usually 1 or 2 on each side, passing from one primary or secondary vein to another at an angle of ca. 90° with the midrib. Inflo-

rescence initially terminal, later pseudolateral, umbellate, three times compound, without persistent bracts; main axis not developed; primary rays ca. 48.5 cm long, minutely and thinly sericeous-puberulent, their number unknown but presumably not more than 5 or 6; secondary rays 6.2–8 cm long, radiating hemispherically at ends of primary rays and outwards in a subsidiary whorl of 4 at ca. 12 cm below, with an occasional extra in between; ultimate coflorescences tertiary, with central bisexual, fertile flowers on pedicels 8–9 mm long at ends of secondary rays and 6–8 lateral, tertiary, 6–8-flowered umbellules arising from 2 to 23 mm below (the interval much more pronounced in the subsidiary whorl, relatively small among the terminal secondary rays), the peduncles and pedicels of the latter respectively 1.4–2 cm and 4–5 mm long, minutely sericeous-puberulent, the pedicels each subtended by a minute bracteole; ovary obconic, 1 mm long, the disk flat, the stylar column 1 mm long. Maturing fruit at ends of secondary rays becoming black, globose, 5–5.5 mm long, 5 mm across, angular when dry, the calyx rim minute, the disk 2–2.5 mm across, narrow, soon rising into a slender stylar column 2–2.5 mm long, the uppermost part 3–5-fid; fruit on lateral peduncles green, immature, 2.5–3 mm long.

Schefflera umbraculifera is superficially closest to *S. suaveolens* but differs most markedly in its leaflets, which are glabrous above but entirely pubescent beneath except for the main venation. Also, the secondary venation is not as strongly developed, the leaflets are thicker, and the inflorescence internodes are longer. *Schefflera neblinae*, with which the type collection was initially identified, and *S. varisiana* both have smaller, narrower leaflets with more or less whitish undersurfaces and smaller inflorescences with trilocular ovaries.

Schefflera umbraculifera is known only from the type collection and has been noted as frequent in shrubby vegetation of upper headwaters, at least some of it secondary.

Schefflera varisiana Frodin, sp. nov. TYPE: Brazil. Roraima: upper slopes of Serra Parima, S of Auaris [Uavaris Valley], 4°03′N, 64°22′W, 1,400–1,520 m, 10 Feb. 1969, *Prance, Steward, Ramos & Farias 09796* (holotype, K; isotypes, CGE, F, NY, US; A, INPA, MG, R, S, U, & VEN, not seen).

Arbor parva *Scheffleram neblinae* simulans, sed haec species nova foliis, 6–7-foliolatis, foliolis anguste obovatis vel obovato-ellipticis ad basin plus minusve attenuatis, paginae infernae venis prominulis a mesophyllo discrepantibus notabilis.

Tree to 8 m high, 12 cm diam. Leaves 6- or 7-foliolate; petioles 15.5–16.5 cm long, the sheathing base small; petiolules 1.8–2.5 cm. Blades narrowly obovate to obovate-elliptic, usually broadest above middle, the surfaces contrasting, 9–12.3 cm long, 3.2–5 cm wide, coriaceous, brittle when dry; apex obtuse to rounded, tip not present, base attenuate to acute, slightly decurrent at insertion of petiolule, margin narrowing from ⅓–⅔ of the way down from apex, incurved but not noticeably inrolled when dry; upper surface glabrous, the venation ± impressed, undersurface whitish or grayish sericeous, the indumentum tightly appressed, the venation somewhat raised in dry state and contrasting with the mesophyll; midrib prominent below; primary lateral veins ca. 12–16 on a side, ± closely parallel, near margin suddenly anastomosing and forming a submarginal vein; secondary venation ± well developed; reticulation fine, irregular, visible mainly on upper surface, with a few cross-veins. Inflorescence terminal, umbellate, twice compound; primary rays ca. 16.5 cm long, their number not known; secondary rays both at apex and in a single subsidiary whorl, ca. 20 at the former, far fewer in the latter; all axes sericeous-puberulent, the hairs much appressed, later glabrescent; umbellules 10–15-flowered, the pedicels slender, 5–6 mm long, sericeous-puberulent; flowers brown, in bud 3 mm long; petals 5, in bud sericeous without, at anthesis spreading outwards before falling; ovary 3-locular, the stylar column united, 0.5 mm long. Fruit not known.

Schefflera varisiana is closely related to *S. neblinae* and appears to be a sister species. From its sibling it differs in its narrowly obovate to obovate-elliptic leaflets, attenuate to acute leaflet base, better developed secondary venation, and particularly the leaflet surfaces: here the upper surface is more evidently rugose and the venation below is more prominent and shows greater contrast. In *S. neblinae* the leaflets are oblong-obovate to oblong-elliptic, the base of the blade is more or less rounded at its insertion with the petiolule, and the blades have less well developed secondary venation and relatively featureless surfaces. The pattern of differences of *S. varisiana* with *S. coriacea* is discussed under *S. neblinae*.

Schefflera varisiana is known only from the type collection and occurs in higher parts of the northern Serra Parima, in scrub forest. The locality is further described in Huber et al. (1984). It is about 375 km from Pirapucú, the type locality of *S. neblinae*, where on its upper slopes at 1,300 m similar forest might be expected.

The epithet is derived from the name of the valley in which Auaris, the type locality, is situated. The initial "ua" has been omitted in the interests of euphony.

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